

7

THE
RESOURCES OF MISSOURI.

BY

S. WATERHOUSE,

ST. LOUIS.

EDITION, - - - - 20,000 COPIES.

ST. LOUIS, MO.,
STEREOTYPED AND PRINTED BY AUG. WIEBUSCH & SON,
1867.

Digitized by the Internet Archive
in 2017 with funding from

This project is made possible by a grant from the Institute of Museum and Library Services as administered by the Pennsylvania Department of Education through the Office of Commonwealth Libraries

CORRESPONDENCE.

THE origin and design of this pamphlet on the Resources of Missouri are explained by the following letters.

To the Editor of the N. Y. Tribune.

SIR: At the request of the State Board of Immigration, of which I am President, Professor Waterhouse has prepared the accompanying papers for publication. They will serve to answer thousands of inquiries made from every part of the United States. The public interest manifested in the subject of these papers justifies me in asking their publication in your paper. I am, very respectfully,

Your obedient servant,

THOS. C. FLETCHER.

Jefferson City, Mo.

Gov. THOS. C. FLETCHER,

DEAR SIR: The accompanying papers are hasty and informal expositions of the advantages which Missouri offers to the immigrant.

In many instances, it has been found impossible to illustrate the resources of this State by recent statistics. For the last six years, no full record of industrial products has been kept. The civil war materially deranged every branch of business. So largely did it interrupt the operations of agriculture, mining and commerce, that the statistics of these departments during the rebellion would, even if they were accessible, convey an altogether erroneous and inadequate impression of the capabilities of Missouri.

But time does not impair the force of a fact. If freshness adds to its interest, age does not detract from its truth. A decade of years has not deprived the statistics upon the minerals of Missouri of their power of producing conviction. And, though the facts which are familiar to our citizens may be new to Eastern and

European emigrants, the only vital point is the efficacy of these facts to impress upon the public mind a full comprehension of the resources of Missouri.

Hoping that a general knowledge of our economic advantages will convert many emigrants from other States and countries into immigrants and citizens of Missouri,

I am, with high regard, yours truly,

S. WATERHOUSE.

St. Louis.

This series of papers has been revised and enlarged. It is hoped that the errors which have escaped correction are not sufficiently grave to weaken the force of the general conclusions. In some instances, from the impossibility of obtaining trustworthy statistics, approximate estimates have been given; but these estimates express the best judgments of men practically conversant with the subjects under discussion.

These articles are mere "advertisements" of the material resources of Missouri. The very object of the series precluded any thorough treatment of the several topics. A fuller discussion would have made a pamphlet too large for general circulation.

The very kind and gratifying reception which a generous public has already given these articles induces the hope that a further indulgence will be granted to sincere efforts for the material growth and mental culture of our noble State.

S. W.

Washington University, June 1st, 1867.

GENERAL ADVANTAGES OF MISSOURI.

January 11, 1865, was the most eventful date in the history of Missouri. It was the birthday of liberty. It ushered Missouri into the sisterhood of free States. The act of that day will bless Missouri through all coming time. It will invigorate every form of business life, and stir the State to an early achievement of material greatness.

Slavery benumbed the faculties of Missouri. States quickened by the incentives of freedom displayed a readier intelligence and prompter solutions of the problems of political economy. With all its superior advantages, Missouri, paralyzed by the torpor of servile institutions, was subjected to the humiliation of seeing itself far surpassed in rapidity of growth by younger and smaller States. The tables of the census are registers of its comparative poverty. Such figures are not liable to the suspicion of rhetorical exaggeration. Slavery degraded labor, palsied enterprise, created unjust social distinctions, fostered a dangerous aristocracy, retarded the progress of industry, and finally plunged Missouri into the horrors of civil war. No free State conspired against the life of the nation. Slavery sowed the seed which has ripened into so fruitful a harvest of death. By its insurrection against lawful authority, it forced the nation—unwilling to submit to assassination, or to commit suicide at the recommendation of traitors—to the ordeal of arms. Missouri bought her freedom with the costly treasure which is coined in the mint of battle. Her trial was severe. Desolate homes and burned villages are the monuments of her fraternal strife. Agricultural labor was interrupted, commerce was prostrated, life and property were insecure, turbulence and carnage reigned supreme. But patriotism has triumphed. The devoted gallantry of our Federal soldiery has vanquished the assailants of republican liberty. Victory has restored to the Nation unity and the possibility of greatness. Missouri will enjoy a liberal share in the splendor and rewards of triumph. Redemption from slavery, and a free participation in the prosperity which will flow from the re-establishment of the Union, are benefits of priceless value. Such gains will more than compensate for the losses of war. The advance in the price of real estate already requites Missouri for the enfranchisement of her slaves. The Ordinance of Emancipation has inaugurated a better era. The State already begins to feel the generous impulses of freedom. A new life is invigorating the body politic. Enterprise, commerce and manufactures are stimulated. Capital is flowing into the State.

Corporations are forming for the development of our internal resources, and factories are rising for the fabrication of domestic materials. The unsunned wealth of our mines is coming to the light in larger quantities. The pleased earth is yielding to the hands of free labor a richer store of golden grain. Processions of immigrant wagons are moving along all our highways. It is estimated that there was during last August and September an accession of 25,000 people to the population of the State. There is a fresh vitality in the very air of Missouri.

The domain which the Ordinance of Emancipation has restored to freedom is imperial. Missouri contains more than 67,000 square miles. It is half as large again as New York, and more than eight times the size of Massachusetts. It would make a score of German principalities. Larger than England and Wales, or Scotland and Ireland, it is equal to one-third of the area of France. The State is 318 miles long by 280 broad. Of its 43,000,000 acres, at least 35,000,000 are valuable for the purposes of agriculture or mining.

The geographical advantages of Missouri are peerless. The State lies not only in the center of the Mississippi Valley, but near the heart of the continent. Its metropolis, lying upon the Pacific Railroad, will be the half-way station between the oceans, and the great central emporium for the distribution of the productions of the Mississippi Valley. That destiny is inevitable. It is the glorious necessity of physical geography. Missouri, lying between the parallels of 36 deg. 30 min. and 40 deg. 36 min. north latitude, enjoys the golden mean of the temperate zone. The salubrity of its climate is proverbial. Its chief defect is a liability to sudden changes. The summers are long and warm. The winters are generally short and mild. On the parallel of St. Louis, the fall of snow is seldom more than two or three inches deep, and rarely remains on the ground a week. Sleigh-rides are infrequent and unsatisfactory. They illustrate the pursuit of pleasure under difficulty. The balmy airs of the Indian summer temper to delightful softness the tardy approach of winter. The average temperature of November, 1865, was 46 deg. 39 min.; in 1866, it was 45 deg. and 6 min.* Semi-tropic fruits mature in Southern Missouri, while the productions of a higher latitude flourish in the northern portions of the State. The soil of the river bottoms and rolling prairie is inexhaustibly fertile, and even the mining regions are capable of supporting a large agricultural population. The surface of Missouri is varied and undulating. Hills and mountains diversify and intersect the State. The copious streams which flow from these elevations fertilize the valleys, and afford a motive power which the level prairie can never supply. Missouri invites manufacturers to her borders with the offer of rich facilities. If natural adaptation is any index of destiny, then this State will ultimately become the workshop of the Mississippi Valley.

* The result of observations made on the northern front of Washington University, at 9 A. M. If it had been a southern exposure, or a later hour, the average would, of course, have been appreciably higher. According to another record, the mean temperature was above 47 degrees.

Missouri is heavily wooded. Her forests contain fuel and timber amply sufficient to meet the wants of a population of 10,000,000.

The mineral wealth of the State is illimitable. Probably no equal area on the face of the globe surpasses Missouri in the richness and variety of her minerals. Her vaults are stored with almost every kind of ore which the arts of man require. The key to all this wealth is a spade. The lock which secures this treasure is earth—any man can pick it.

During the rebellion Missouri was cruelly vexed with evil spirits. But these have at length been cast out, and now the State, though rent and scarred by convulsions, is restored to sanity and health. It is now ready to commence an unobstructed career of development. The motives of freedom, fertility of soil, salubrity of climate, wealth of minerals, facilities for commerce and manufactures, and ease of railroad and river transportation are the material advantages which invite the capitalist, the tradesman and the artisan of every clime and nationality to a home in Missouri, to a co-operation in the development of its measureless resources, and to an enriching participation in its prosperity.

AGRICULTURE OF MISSOURI.

Missouri presents to the farmer those conditions of climate which are most favorable to husbandry. The cold of the Northern latitudes restricts variety of production and blockades communication with icy barriers. The heat of the South enervates energy and invites to indolence. Missouri enjoys the genial mean which permits the widest range of products and the full exercise of physical powers. The thermometrical record kept at Jefferson Barracks—latitude 38 deg. 28 min., elevation 472 feet—shows that the mean annual temperature for twenty-six years, is 55.46 deg. The highest monthly average is 85.80 deg., and the lowest 18.54 deg. The mean annual rain-fall is 37.83 inches. The thermal and hydal averages of the season are :

Spring, 56 15	deg.	10.56	inches
Summer, 76 19	"	12.88	"
Autumn, 55 63	"	8.02	"
Winter, 33 85	"	6.37	"

It seems as though it would only be necessary to advertise these advantages of climate to induce agricultural emigrants to avail themselves of such a genial co-operation of nature.

Of the 35,000,000 acres of arable land in Missouri, 2,000,000 are the alluvial margins of rivers, and 20,000,000 high rolling prairie.

The richness of the soil is practically inexhaustible. In bottoms the mold is sometimes six feet deep. Some farms, after bearing without artificial fertilization twenty five successive crops, have yet failed to show any very great decrease in productiveness. The strength of the land and the length of the season permit two harvests to be gathered from the same field every year. Winter wheat or oats can always be succeeded by a crop of corn fodder, or Hungarian grass, from the same ground. This is an advantage of material importance to small farmers. The composition of the soil varies with the geological formation. But the main elements—clay, lime, sand and vegetable mold—commixed in different proportions, form a rich marl or loam which the facts of harvest prove to be highly fruitful. The following statistics, which are given by Mr. Parker, may in some instances largely exceed the average yield, but still they illustrate the possible productiveness of the soil:

Counties.....	Lafayette.	Holt.	Howard.	Saline.	Pettis.
Hay, tons	2 or 3	—	—	*	2 or 3
Wheat, bushel per acre	25	—	40	40	50
Oats, " "	—	40	—	50	50
Corn, " "	100	125	100	100	100
Potatoes, " "	—	—	—	300	150
Tobacco, lbs	800	—	2000	1200	800
Hemp, " "	2200	1500	1500	1300	1200

These counties are not selected on account of superior fertility; they are taken as samples for the simple reason that I have not been able to procure recent returns from other counties. In some of these products, the figures indicate a productiveness which is below the average of the richest districts. The table refers to special harvests and farms, and does not aim to express the mean fertility of the several counties or of other years. The average yield of wheat in Missouri is from 15 to 25 bushels an acre.

Little facts are often suggestive of the fruitfulness of the soil. Sweet potatoes have been raised in Missouri which weighed ten pounds apiece. Apples and turnips have been exhibited at our fairs which measured respectively six and eight inches in diameter. Melons and pumpkins have been produced which attained the relative weights of 40 and 100 pounds. Corn sometimes reaches as high as sixteen feet, and sorghum twenty feet. In good seasons, farmers occasionally cut four tons of hay to the acre. In all these cases, the average is of course much below these figures. These exceptional instances are cited to show what vegetable monsters the richness of the soil sometimes brings forth.

Yet, notwithstanding this wonderful wealth of soil, more than 25,000,000 acres of land in Missouri are suffered to lie fallow. There are to-day 4,000,000 acres of unentered land in this State. Nearly all of this land is rich in agricultural or mineral resources. Under the Homestead Law, 160 acres can be purchased for \$18. Improved farms can be bought at from \$5 to \$30 an acre.

* Timothy 3—Clover 4—Hungarian Grass 5 tons.

According to a recent estimate of the Agricultural Bureau, the average price of farm labor in Missouri is \$18.00 a month with board, and \$26.75 without it.

The water of Missouri is abundant and healthful. Perennial springs and copious streams are found in every part of the State. The alluvium which the Mississippi holds in solution does not impair the salutary quality of its waters. The undulating surface of Missouri affords advantages of drainage and water-power which are denied to level prairies. This is an important consideration. The necessity of thorough drainage to highly successful husbandry has been established, and the emigrant who would prefer the plains of other States to the gentle inequalities of Missouri, would betray a costly ignorance of his own interests.

The products which thrive in Missouri are too numerous for separate enumeration. The list would be an inventory of the productions of the temperate zone. All the cereals grow with rank luxuriance. The soil is rich in the chemical elements of which the different grains are composed.

Cotton is produced in the Southern portion of the State. The amount per acre varies from 200 to 400 pounds. During the war, it was a very profitable crop.

The soil of Missouri is suited to the culture of Sorghum and Imphee. Their rank growth and great productiveness strongly recommend a more general cultivation of these vegetables. No portion of them is worthless. The juice is refined into excellent sugar and syrup, the leaves make good fodder, and the fiber of the stalk is manufactured into paper.

Hemp and tobacco are two of the main staples of Missouri. Equal to the best growth of Kentucky and Virginia, they are a vast source of wealth to the State. Few crops yield a larger profit. Missouri produces more than forty-five per cent. of the hemp of the United States.

Missouri is admirably adapted to the cultivation of fruit. Apples, pears, peaches, plums, cherries, currants, strawberries, blackberries, quinces, apricots and nectarines, reach a rare size and delicacy of flavor. Trees and vines grow rapidly and bear largely. In southern Missouri, the winters are so mild that fruit trees are seldom injured by inclemency of the weather. The season, which even in northern Missouri permits plowing by the middle of March, cannot be very severe or protracted. In open winters, farmers have not infrequently done their plowing in December and January. In the genial climate of Missouri, the farmers may enjoy from May to November an uninterrupted succession of fresh fruits. Apples can be produced in illimitable quantities. The trees mature at least five years earlier than they do in New England. Peach trees continue to bear from fifteen to twenty years, and apple trees from twenty-five to thirty years. Two thousand bushels of peaches have been gathered from a single acre. Fruit culture is one of the most lucrative branches of husbandry in Missouri.

Unless the prophecies of scientific men are false and the obvious intentions of nature are thwarted, Missouri is destined to be the

vineyard of America. There has been no elaborate investigation since the geological survey of Professor Swallow. But the familiarity of the facts which his researches developed does not diminish their truthfulness. It is estimated that there are in Southern Missouri 15,000,000 acres adapted to the culture of the grape. This land is situated 1,000 or 1,500 feet above the level of the ocean. Nature has, in many localities, moulded the surface into terraces, as if on purpose to facilitate the labors of the vine-dresser. The composition of the soil is remarkably like that of the celebrated vine lands of Germany and France. Chemical analysis shows that the soil abounds in lime, soda, potash, magnesia, and phosphoric acid; and these are the principal elements which enter into the structure of the vine. The soil is dry and light, the air equable and comparatively vaporless; the water abundant and pure. These are the identical conditions under which the luscious vintages of the Old World attain their perfection.

The success of our vineyards has been seriously diminished by the inexperience of our vine-dressers. Unfamiliarity with the best methods of treatment, and ignorance of the varieties best suited to our conditions of climate and soil, have materially lessened the profits of grape-growing in Missouri.

Yet the following averages, based upon the statistics of Mr. HUSMANN, in his excellent treatise on "Grapes and Wine," show that, even under the existing disadvantages, the culture of the vine has been highly lucrative.

The approximate expense of preparing a vineyard is indicated below.

Variety of Grape.	Cost per Acre.
Delaware	\$875.00
Norton's Virginia	660.00
Herbemont	625.00
Catawba	465.00
Conecord	410.00

The mean results per acre of one of Mr. HUSMANN's vineyards, from 1849 to 1865 inclusive, are as follow:

No. Vines.	No. Gal.	Price per Gal.	Gross Value.	Net Profit.
3276.	529.	\$1.50	\$253.00	\$163.00

The cost of $2\frac{1}{2}$ acres, planted in 1861, was:

1700 Norton's Virginia, at \$20 per 100.....	\$340.00
400 Conecord, " 25 " "	100.00
350 Delaware, " 50 " "	175.00
150 Herbemont, " 25 " "	37.50
50 Cunningham, " 50 " "	25.00
Other assorted varieties	100.00
Expense of preparing land, \$50 per acre.....	125.00
Erection of trellis, \$150 per acre	375.00
Interest on capital	100.00
Total	\$1,377.50

The products of this vineyard were:

First year, layers and cuttings	\$339.00
Second " " " "	1,200.00
Third " " " "	2,500.00
Fourth " " " "	4,000.00
Third " 2,000 lbs Concord grapes at 16 cts. net..	320.00
Fourth " 2,040 " " " " 24 " " ..	489.60
Fifth " 1,030 gal. Concord, at \$2.50 per gal.	2,575.00
1,300 " Nort. Virg. " 4.00 " " ..	5,200.00
125 " Herbemont " 3.00 " " ..	375.00
40 " Delaware " 6.00 " " ..	240.00
30 " Cunningham " 4.00 " " ..	120.00
10 " Clinton " 3.00 " " ..	30.00
50 " Other kinds " 3.00 " " ..	150.00
336 lbs Hartford Prolific, at 20 cts. per lb	67.20
57,000 plants at \$100 per 1000	5,700.00

Gross value

Deduct the interest on capital at 5 per cent.	\$500.
" cost of plants, trellis &c.	1,277.
" " labor for the 1st year.	150.
" " " " 2nd "	300.
" " " " 3rd "	400.
" " " " 4th "	500.
" " " " 5th "	500.—\$3,627.00

Net profit

The following exhibit shows the annual returns of Mr. M. POESCHEL's new vineyard:

Year.	Area.	Gross profits.
1863.	2 $\frac{1}{4}$ acres	\$3,900.00
1864.	5 "	5,450.00
1865.	7 $\frac{1}{2}$ "	14,237.50
Total.		\$23,587.50

The averages of Mr. POESCHEL's old vineyard, from 1847 to 1863 inclusive, were:

Acres.	Gal. per acre.	Price per gal.
4.4	986	\$1.54

The statistics of Mr. WM. POESCHEL's vineyard are:

Year.	Area.	Gross profits.
1857.	1 $\frac{1}{2}$ acres	\$1,402.50
1858.	1 $\frac{3}{4}$ "	275.00
1859.	1 $\frac{3}{4}$ "	375.00
1860.	2 "	1,846.80
1861.	2 "	783.50
1862.	2 "	1,742.12
1863.	2 $\frac{1}{4}$ "	2,512.00
1864.	2 $\frac{1}{4}$ "	630.00
1865.	5 "	8,290.00

9 years 20 $\frac{1}{2}$ acres \$17,856.92

Under favorable circumstances, two aeres of vines yielded the following results :

No.	Variety.	Gallons.	Price per Gal.	Amount.
350.....	Delaware	40	\$6.00	\$240.00
100.....	Herbemont	125	3.00	375.00
500.....	Concord	1,030	2.50	2,575.00
1,200.....	Norton	1,300	4.00	5,200.00
Other vines				367.20
Cuttings				5,700.00

Total value\$14,457.20

Deduction of cost, labor and interest... 1,000.00

Net profit of two aeres in one year.....\$13,457.20

These figures exhibit a profit which is certainly ample enough to satisfy every reasonable expectation of gain.

In 1865, the value of the grape crop in the vicinity of Hermann was appraised at \$150,000. If we may be guided in our estimates by European statistics, the vinelands of Missouri are able to afford a pleasant and remunerative occupation to a population triple the present census of the State, and to yield an annual vintage of at least 1,000,000,000 gallons of wine. The physical structure of Southern Missouri is a prophecy of rich and delicious vintages, which the sagacious enterprise of our citizens should speedily fulfil.

Almost all the valuable varieties of forest trees abound in Missouri. The pine, oak, ash, elm, walnut, hickory, maple, gum, overcup, cottonwood, eypress, chestnut, sycamore, linn, beech, catalpa, and tupelo are found in different portions of the State. The following table, taken from Mr. Parker's suggestive volume, shows the magnitude which some of these trees occasionally reach :

County.	Tree.	Circum. in feet.	Height.
Dunklin	Catalpa.....	10.....	90
Cape Girardeau.....	Sweet Gum.....	15.....	130
"	White Ash.....	18.....	110
Pemiscot	Elm.....	22.....	100
"	Cypress	29.....	125
Howard.....	White Oak.....	28.....	100
Stoddard.....	Beech	18.....	120
"	Tupelo	30.....	120
Mississippi.....	Spanish Oak.....	28.....	110
"	Sycamore.....	43.....	—

The magnitude of these statements excites distrust. But I have no means of verifying them. If there is no error in the figures, the existence of such vegetable giants demonstrates a marvelous opulence of soil. Large districts of southern Missouri are heavily covered with timber. For the purposes of ship-building, the live oak of this State is unsurpassed by any that grows in the Mississippi Valley. In the southern counties, there are millions of aeres of valuable yellow pine which the hand of man has not touched. Some of these are four feet in diameter, and shoot up to a height of ninety feet. Energy might easily coin this timber into a fortune.

Last year about \$50,000 worth of tar, rosin and turpentine was brought to St. Louis from these pineries and sold at a large advance upon the cost of manufacture.

The cultivation of grass brings the farmer liberal profits. Clover, timothy, red-top, Hungarian and herds-grass grow with spontaneous exuberance. The yield varies from one and a half to three tons an acre. In the culture of this crop, improved machinery enables the farmer to secure large returns for a slight outlay of labor. The richness of the herbage is favorable to stock-raising. Cattle occasionally graze all winter. It is seldom necessary to feed them more than two months and a half. The luxuriant verdure of our alluvial bottoms and loamy uplands would fatten cattle enough to supply the markets of the country. The farmer has the advantage of the open prairie—his herds can feed at will upon its verdant pasturage. The stock raiser adjacent to a prairie can make a profitable use of its vast commons. The hilly region of southern Missouri is admirably adapted to sheep grazing. A moderate use of Missouri's ability to raise sheep would remove the necessity of importing into this country 100,000,000 pounds of wool annually.

The alpaca of Peru is a hardy animal, and thrives upon the scantiest pasturage. Our national Bureau of Agriculture has recommended the naturalization of this animal in the United States. The hardihood of the alpaca and its abundant yield of wool justify the attempt. Southern Missouri affords the finest opportunities for the trial of this experiment. Our farmers may find in the introduction of this new breed a rich reward for their enterprise. In this way, portions of the State too uneven or sterile for the purposes of agriculture may be reclaimed to profitable uses. At all events, the experiment is worthy of a trial.

The mulberry tree grows wild in Missouri. It is hardy and rank. With cultivation, it would answer every want of the silk-grower. The Chinese silk worm, which has been imported from France and naturalized in this country, would find in the abundant foliage of the ailanthus tree rich materials for its glossy fabric. The softness of the climate is peculiarly favorable to the health and industry of this little manufacturer.

The castor bean richly repays the labor of cultivation. An acre will yield from fifteen to twenty-five bushels. During the last four years the price has varied, in consequence of competition, from \$2.50 to \$5.50 a bushel. The oil factories of St. Louis alone are able to express 200,000 bushels of castor beans annually. At the present price of castor oil, the manufacturers can afford to pay from \$2.50 to \$3 a bushel.

Flax is a quick crop. In three months from the time of sowing, the farmer can receive the profits of his industry. The yield of an acre is from fifteen to twenty-two bushels of flaxseed; or, when flax and barley are sown together, from ten to fifteen bushels of flaxseed, and from sixteen to twenty-two bushels of barley. The average weight of straw to the acre is from one and a half to two tons. The crop is unfailing. Its certainty is a strong recommendation.

The annual capacity of our St. Louis mills for the manufacture of linseed oil is 250,000 bushels. For the last three years, the seed has been worth \$2.50 a bushel. The millions of dollars which this country is now paying for imported castor and linseed oil ought to enrich American producers. The culture of flaxseed and the castor bean challenges the favorable attention of the farmers of Missouri.

The cultivation of the beet may yet expand into an important branch of Western agriculture. The enormous productiveness of this vegetable may enable it to enter into a profitable competition with cane in the manufacture of sugar.

The necessary brevity of this article precludes a fuller discussion of the agricultural interests of Missouri. Our limits only permit the mention of our leading staples. But this brief enumeration of our principal products or capabilities suffices to show the rare adaptation of Missouri to the uses of agriculture.

The Agricultural Bureau at Washington is efficiently promoting the interests of American husbandry. It is intelligently exploring the productions of the world, determining their value and testing their adaptation to the needs of American agriculture. Our farmers ought to avail themselves of every judicious and practical suggestion which emanates from this Bureau. They cannot afford to neglect the results of scientific investigation. The liberality of the general Government has given to Missouri 330,000 acres of public lands. This gift is sufficient for the organization and partial endowment of an Agricultural University. Such an institution, organized upon a practical basis, might render an important service to the farming interests of Missouri. It would elevate agriculture to a science, and promote alike the cultivation of the mind and the soil. It would diffuse throughout the State the latest results of scientific inquiry and experiment. It would suggest new, less expensive and more profitable processes of culture. It would liberalise the mind by broader views and nobler conceptions of the independence and dignity of the farmer's life. The husbandry which is prompt to take the hints derived from chemical analysis and actual trial, will always produce the most fruitful harvest.

Our soil and climate are favorable to every staple of the temperate zone. In every direction, there are unopened avenues leading to wealth. Rich lands and certain competency are the prizes which the intelligent immigrant will draw. For the prudent and industrious settler there are no blanks. In this State, agriculture will assuredly bless its skilful follower with independence and worldly store.

St. Louis, easily accessible by river or rail, furnishes a ready and unfailing market for every production of the husbandman. The exuberant West invites the farmers of the Old World and of New England to forsake their ungrateful wastes for a soil which will show a richer appreciation of their tillage.

MINERALS OF MISSOURI. *

Missouri may safely challenge the world to produce its superior in the number, extent and value of its minerals. The immensity of its mineral wealth subjects even a truthful exposition to a suspicion of exaggeration. The sober calculations of geology seem to be mere figures of rhetoric. The imperfect explorations which have been made have disclosed the superiority, but not the full magnitude, of the metallic resources of Missouri. Some of the vaults of nature's bank have been opened, but the treasure is too vast to be counted. The earth has hoarded in its coffers an unminted and incalculable wealth. The inventory of the mineral resources of Missouri enumerates springs—whose waters are impregnated with salt, sulphur, iron and petroleum—jasper, agate, chalcedony, lithographic stone, vitreous sand, granite, marble, limestone, plastic and fire-clays, metallic paints, hydraulic cements, mill and grind-stones, fire-rock, kaolin, emory, plumbago, nickel, cobalt, zinc, copper, silver, gold, lead, coal and iron. Most of these minerals occur in quantities that are literally inexhaustible. In case of many of these articles, the mines and quarries of Missouri could easily supply the market of the world. If an incomplete geologic survey and the rude efforts of unscientific miners, who have as yet scarcely touched the vast deposits of the State, have disclosed such results, we may justly expect far richer developments when an exhaustive investigation has been made, and systematic mining been extensively prosecuted.

Of silver and gold, traces only have been discovered. Cobalt and nickel exist in profusion.

Zinc is very abundant. Its masses have often retarded the mining of more valuable ores. Thousands of tons of this metal, thrown away by the lead miners as a vexatious and worthless impediment to their progress, might be with a profitable cheapness reclaimed to the uses of commerce. The ore is very pure.

Copper has been found in 15 counties. At Hinch's Mine, 800 pounds of ore gave 272 pounds of good copper. In this locality, the gangue is red clay, chert and magnesian limestone. At Rives' Mine, the ore lies only 20 feet below the surface. The deposit is several feet thick, and contains a rich proportion of copper.

The copper Hill Mine has yielded 100,000 pounds. The ore from the Stanton Mines gives, according to two analyses, 48.41 per cent of pure copper. The ore is usually a sulphuret or carbonate.

But very little attention has been paid to the zinc and copper mines of Missouri. The larger profits of other kinds of mining have diverted public enterprise from a fair trial and full development of these ores. The success of the copper works at Frederick-

* The materials of this article are almost exclusively derived from the able Reports of Professors Swallow and Litten in the Geological Survey of the State of Missouri.

town would justify more extended operations in this neglected branch of mining.

Lead has been discovered in more than 500 localities. Its purple veins run through 20 counties and intersect an area of more than 6,000 square miles. The richness of these mines is exhibited by the following statistics:

	Pounds of Lead.
Total yield of Perry's mine to 1854.....	12,000,000
“ “ Vallé's “	13,000,000
“ “ Franklin's “ from 1824 to 1854.....	20,000,000
Yield of Shibboleth mine in 1811.....	3,000,000
“ Washington and St. Francois Counties from 1841 to 1854.....	50,000,000
Annual yield of Washington county.....	3,000,000
Total “ Virginia mine	10,000,000*
Yield of Williams' mine in 9 months of 1854.....	145,000*
“ Frazer's “ 1 month.....	100,000*
“ “ “ week	50,000*
Shipped from Selma alone from 1834 to 1854	70,000,000
Annual average of all mines from 1840 to 1854.....	4,000,000

At the mine of Price, Bray & Co., 2,000 lbs. of Galena have been taken from a shaft which is only 10 feet deep. The ore at Mineral Point is in some places 18 inches thick.

The lead is mostly sulphuret. Out of 120 specimens of ore, 113 were sulphuret, 6 sulphuret and carbonate, and 1 sulphate.

From 60 to 85 per cent. of the ore is pure lead. The gangue is generally sulphate of baryta. The ore is often found in magnesian limestone, or red clay interspersed with brown hematite, pyrites and ochre. The mines which have been worked are mostly shallow.

The shaft of Williams' mine was from 25 to 75 feet deep.

“ “ Shibboleth “ “	16 “ 60 “
“ “ Price's “ “	10 “

At Granby, the lead comes to the very surface of the ground.

In November, 1865, Mr. Rutter, the Superintendent of the St. Louis White Lead Factory, made a careful examination of Mine la Motte. His report to Mr. Banker, then President of the Lead and Oil Company, embraces the following interesting facts: The ore, which is almost exclusively a sulphuret, contains from 60 to 66 per cent. of pure lead. It is found in a limestone formation, at a depth of from 22 to 30 feet below the surface. The earth which overlies the limestone varies from 6 to 12 feet in depth. Horizontal sheets of almost pure galena, varying from 1 to 12 inches in thickness, cover the beds of mineral; beneath them lies a less productive sulphuret, which extends downward from 4 to 6 feet. The mean thickness is 8 inches.

The weight of a square foot of lead, 1 inch thick, is 40 pounds.

“ “ “ “	8 inches “ 320 “
---------	------------------

Sometimes a single drill yields 100 of these nearly cubic feet in a month. But an average of 50 feet gives, as the product of one drill, 615 pounds a day, or 16,000 pounds a month. The daily expense of each drill is \$7.50. Each furnace smelts from 40 to 80 pigs of lead a day. An average product of 50 pigs, or 3,700 pounds, requires the reduction of 6,166 pounds of ore. The cost of smelting is \$37 a day.

Ten drills are necessary to keep one furnace in blast. We are now ready for a summary of results:

3,700 lbs. lead at \$5.71 $\frac{1}{2}$, the average price in this market for the five years previous to 1861...	\$211.51
Deduct freight to St. Louis $\frac{1}{2}$ c per lb.	\$18.50
“ commission for selling, 1 per cent. on \$211.51	2.11
“ cost of mining, ten drills at \$7.50 each	75.00
“ cost of smelting.....	37.00
Profit of one furnace per day.....	\$ 78.90
“ “ “ “ month	2,051.40
“ “ “ “ year.....	24,616.80

At this rate 100 drills, a number not exceeding the capacity of a large company, would yield an average revenue of \$359,252.

During the first year, large operations would involve a heavy outlay for shafts, drainage and machinery. But the cost of repairs and improvements could hardly exceed 30 per cent. of the year's earnings.

The preceding estimates are based upon present facts, and not upon theoretical possibilities. They are founded upon the practical results of recent mining. An enlargement of present operations and a more extended use of existing facilities are all that is necessary to secure the success which the foregoing figures indicate.

Doubtless a treatment by the economic methods of science would give a measurably higher percentage of profit.

Perfectly pure galena contains 13.34 per cent. of sulphur and 86.66 per cent. of lead.

An uncrystallized specimen from Mine la Motte, analyzed by Dr. Litton, gave—together with traces of iron, copper and nickel—13.50 per cent. of sulphur and 84.50 per cent. of lead.

Under our present wasteful processes, the sulphurets of Mine la Motte sometimes yield 77.7 per cent. of pure lead.

Except the slave labor of three proprietors, and scarcely 200 men have ever been employed at one time in the mines of Missouri. The operations have commonly been desultory and the methods unscientific. Miners have chiefly sought superficial deposits in soft clay, where the ore could easily be reached with the spade. Mining, by the systematic process which science teaches, will probably develop far richer deposits than any yet found.

Coal underlies a large portion of Missouri. It has already been discovered in 30 counties. Beds of cannel coal, 45 feet thick, have been found. There are 160 square miles of coal in St. Louis

county. The amount of coal in Cooper county has been estimated at 60,000,000 tons. Under every acre of Boone county there is supposed to be at least \$1,000 worth of coal. The deposits in the vicinity of Booneville cover an area of 2,000 square miles. The strata have a mean thickness of three feet, and are calculated to contain 60,000,000 tons of coal.

The following estimates are based upon the survey of Professor SWALLOW:

Counties.	Square miles.	Mean thickness.	Tons of Coal.
Andrew, } Atchison, } Buchanan, } Holt, } Platte, }	2,000	10 feet	20,000,000,000
Chariton, } Linn, } Livingston, } Macon, }	1,500	12 feet	18,000,000,000
State of Missouri	26,887	8 feet	200,000,000,000

If we allow one half of this quantity—which is more than 34,400,000,000 tons below the calculation of Professor SWALLOW—as the true measure of our coal beds, it would take, at 100,000 tons a day, more than 3,000 years, at 300 working days each, to exhaust the coal deposits of Missouri.

Iron abounds in different portions of Missouri, but the stupendous masses of almost solid iron, found in St. Francois, Iron and Reynolds counties, dwarf the discoveries of other localities into insignificance. Before the bloomeries of Iron-ton, the furnaces in other sections of the State must pale their ineffectual fires. The results of Dr. LITTON's investigations have been often published, but perhaps the use for which this article is designed will justify their reproduction.

Shepherd Mountain is 660 feet high. The ore, which is magnetic and specular, contains a large percentage of pure iron. The height of Pilot Knob above the Mississippi river is 1,118 feet. Its base 581 feet from the summit, is 360 acres. The iron is known to extend 440 feet below the surface. The upper section of 141 feet is judged to contain 14,000,000 tons of ore.

The elevation of Iron Mountain is 228 feet, and the area of its base 500 acres. The solid contents of the cone are 230,000,000 tons. It is thought that every foot beneath the surface will yield 3,000,000 tons of ore. At the depth of 180 feet, an artesian auger is still penetrating solid ore.

Dr. LITTON thinks that these mountains contain enough iron above the surface to afford for 200 years an annual supply of 1,000,000 tons. The ore is almost exclusively specular. It yields 56 per cent. of pure iron. The iron is strong, tough and fibrous.

These estimates of the amount of lead, coal and iron in the State are founded upon the elaborate researches of geologists. Their deductions are based upon geologic investigations and chemical

analyses. The well-considered judgments of men of scientific eminence are certainly entitled to audience and respect. But suppose these calculations are erroneous—take one hundredth part of the aggregates, and you still have proofs of vast and exhaustless mineral riches. The fictions of Arabian wealth hardly equal the reality of Missouri's treasures.

These ores underlie some of the richest land in the State. The owner possesses at once a fertile farm and a valuable mine. In some cases, it is difficult to determine whether the agricultural or mineral resources are most productive. Full coffers are the reward of either industry. A poor man can earn enough in a few months to purchase a mineral farm. Under prescribed conditions, less than \$20 will secure a homestead of 160 acres. The workman who, with a full knowledge of the fact, would prefer delving for a mere pittance in the mines of Europe to the independent ownership of a mine in Missouri, must be a miner who has not yet reached the years of discretion. He must be too young to have a mine of his own.

The recent disasters in the collieries of England will doubtless lead to the emigration of many British miners. The loss of 600 lives by the late catastrophe may well attract the public attention to the hardships, unhealthfulness, and extreme danger of English coal mining. Great depth of mines, stifling heat, thin veins of coal, protracted toil in a recumbent position, poisonous gas, and deadly explosions are the inevitable conditions of British mining. That English miners should be willing to encounter all these privations and perils for wages which scarcely save them from starvation shows a remarkable contentment under adversity, or great ignorance of the advantages which America offers. The mines of Missouri present a favorable contrast to the collieries of Britain. They are shallow, cool, and healthful. The thickness of the seams generally permits work in an erect position. Never, in a single instance, have the galleries of our coal mines been the scene of a fatal explosion. If the unembellished facts of our mineral resources and mining facilities could be diffused throughout the coal districts of England, thousands of British miners would no longer submit to their present hardships, but hasten to the favored State where higher wages and lighter labors would soon procure them a happy competency. The inducements which Missouri presents to the miner are great and substantial. Liberal wages will reward his service and enable him to satisfy his love of independence and home by the early acquisition of a freehold. Political equality, social respect, and material success await the myriads whom a knowledge of our mineral resources will soon make citizens of Missouri.

MANUFACTURES OF MISSOURI.

THERE is no branch of general industry to which Missouri has paid less attention than to manufactures. The rare advantages of the State have not been improved. The amount of our domestic products is by no means commensurate with our facilities for manufacture. The last census exhibits a palpable neglect of this department of industry.

In 1860, the total value of our national manufactures was \$1,900,000,000. The workshops of the country employed 1,400,000 persons, and supported 5,000,000. The sum which Missouri contributed to this enormous aggregate is reproachfully small. In 1860, the total number of manufacturing establishments in the State was 2,800.

Their capital was	\$20,500,000
Value of raw material.....	24,000,000
“ “ annual product	43,500,000
Number of workmen.....	21,000
“ “ persons dependent upon manufactures.....	62,000

A few comparisons will illustrate the insignificance of our manufactures.

CAPITAL OF MANUFACTORIES IN 1860.

New Hampshire ...	\$25,900,000	Ohio.....	\$58,000,000
Massachusetts	133,000,000	New York	175,000,000

VALUE OF RAW MATERIAL.

New Hampshire ...	\$24,400,000	Ohio.....	\$70,000,000
Massachusetts	141,000,000	New York	210,000,000

VALUE OF PRODUCT.

New Hampshire ...	\$45,500,000	Ohio.....	\$125,000,000
Massachusetts	266,000,000	New York	379,000,000

NUMBER OF WORKMEN.

New Hampshire	36,000	Ohio	81,000
Massachusetts	217,000	New York	221,000

NUMBER OF PERSONS DEPENDENT UPON MANUFACTURES.

New Hampshire	108,000	Ohio	243,000
Massachusetts.....	651,000	New York.....	663,000

NUMBER OF ESTABLISHMENTS.

New Hampshire.....	2,582	Ohio	10,710
Massachusetts.....	7,766	New York.....	23,236

From this table it will be observed that Missouri, with an area more than seven times that of the Granite State, is still inferior to New Hampshire in manufacturing activity. Our want of energy is conspicuous in the very articles which Missouri is best fitted to produce. The following figures show the value of special products for the year 1860:

FURNITURE.

Missouri.....	\$200,000	Ohio	\$3,700,000
Massachusetts	3,365,000	New York.....	7,175,000

AGRICULTURAL IMPLEMENTS.

Missouri.....	\$280,000	Ohio	\$2,690,000
Massachusetts	1,740,000	New York.....	3,429,000

PIG, BAR, AND ROLLED IRON.

Missouri.....	\$1,110,000	Ohio	\$3,000,000
Massachusetts.....	1,694,000	New York.....	3,600,000

CAST IRON.

Missouri	\$1,041,000	Ohio	\$1,650,000
Massachusetts	1,800,000	New York.....	8,216,000

MACHINERY.

Missouri	\$750,000	Ohio	\$4,855,000
Massachusetts.....	5,131,000	New York.....	10,484,000

SAWED AND PLANED LUMBER.

Missouri	\$3,700,000	Ohio	\$5,600,000
Massachusetts.....	2,288,000	New York.....	12,485,000

FLOUR AND MEAL.

Missouri	\$8,997,000	Ohio.....	\$27,129,000
Massachusetts	4,196,000	New York.....	35,000,000

COAL.

Missouri.....	\$8,200	Ohio	\$1,539,000
Illinois	964,000	Pennsylvania.....	2,833,000

LEATHER.

Missouri.....	\$368,800	Massachusetts.....	\$10,354,000
Pennsylvania.....	12,491,000	New York.....	20,758,000

BOOTS AND SHOES.

Missouri.....	\$868,700	Massachusetts	\$46,440,000
Pennsylvania.....	8,179,000	New York	10,878,000

TOTAL PRODUCTS OF INDUSTRY.

Missouri.....	\$43,500,000	Massachusetts	\$266,000,000
Pennsylvania.....	285,500,000	New York.....	379,600,000

PIG AND WROUGHT IRON IN 1865.

Missouri.....	\$2,740,800	West Virginia	\$3,379,600
Kentucky.....	3,208,000	Ohio	20,588,600

In 1865, the value of the cotton manufactures of Massachusetts was nearly \$100,000,000.

But it may be justly alleged that there is an obvious unfairness in instituting comparisons between young and old States. Consider indulgently the youth and servile impediments of the State, make every allowance which a justice tempered with partiality may

require, and then the inference that Missouri has neglected its vast manufacturing facilities is unavoidable. These statistics are adduced not to aggravate past remissness, but to stimulate future effort.

An era of greater activity has already begun. In St. Louis, for the year ending October 1865, the United States Assessor reports an average of ten licenses a day for the opening of new establishments. During the same period, there was an increase of 5 per cent. in the manufacture of clothing, cotton fabrics, boots, shoes, iron and wooden ware.

It is obviously unnecessary to enumerate the articles that ought to be manufactured in Missouri. There is scarcely a want or a luxury of human life which this State is not able to satisfy by products of domestic manufacture.

Accessible forests of various and valuable lumber cover whole counties, and yet we import annually 150,000,000 feet of lumber, at a cost of \$6,000,000.

Admirable water power abounds in almost every part of the State, yet we allow the spendthrift streams to squander their energies. The daily flow of Gunther's Spring is 5,000,000 cubic feet of water, and the discharge of Bryce's Spring is more than double that quantity. The water is so warm that it does not freeze. It is copious, unfailing, and iceless. Conditions more favorable to the manufacturer can hardly be imagined. This great power which is now running to waste should be set at the earliest moment to the music of machinery. It should be taught to drive the wheels of saw-mills and to whirl the spindles of woolen and cotton mills. No sound reason can be offered why this State should not produce its own textile fabrics. The only cotton mill in St. Louis has met with a success that ought to lead to the erection of other factories.

Indian hemp is now assuming a commercial importance among the great staples of the world. The rapidity with which this commodity has entered into the trade of nations recalls the earlier years and sudden expansion of the cotton traffic. The Commissioner of Internal Revenue, in his last Report, gives the following table of the exports of Indian hemp. The average weight of the bales is 300 pounds.

Years.	United States.	France.	Great Britain.	Other Countries.	Total pounds.
1856	20,474	20,168	248,651	1,045	87,101,400
1857	31,740	24,055	242,770	2,555	90,336,000
1858	38,308	21,314	197,441	4,309	78,411,600
1859	27,725	28,713	391,741	1,519	134,909,400
1860	1,704	33,804	360,725	2,113	119,503,800
1861	16,501	36,283	301,798	1,426	106,802,400
1862	17,807	23,780	365,505	12,573	125,899,500
1863	16,120	12,555	707,078	13,794	224,864,100
1864	16,646	7,933	552,748	161,332	221,597,700
1865	28,804	8,999	754,714	26,260	245,633,100

The importation of jute into the United States is already very large. The extent of our imports is shown in the annexed exhibit:

Years.	Gunny-bags.	Pounds.	Yards of Gunny-cloth	Pounds.	Total Weight.
1856	6,423,200	12,846,400	23,358,000	49,635,750	62,482,150
1857	4,669,650	9,339,300	15,003,570	31,882,586	41,221,886
1858	4,562,327	9,124,654	19,170,000	40,736,250	49,860,904
1859	4,266,400	8,532,800	25,489,020	54,164,168	62,696,968
1860	3,294,945	6,589,890	26,631,180	56,591,259	63,181,149
1861	3,208,725	6,417,450	8,517,060	18,098,753	24,516,203
1862	3,376,786	6,753,572	6,896,100	14,654,212	21,407,784
1863	3,703,000	7,406,000	669,600	1,422,900	8,828,900
1864	2,676,300	5,352,600	392,400	833,850	6,186,450
1865	6,875,215	13,750,430	1,834,920	3,899,205	17,649,635

In 1865, 305,166 bales of jute were imported into the United States. It is important to notice the immediate source of these importations.

From India, raw material	8,641,200	pounds.
“ Great Britain, “ “	3,000,000	“
“ “ “ manufactured goods....	24,000,000	“
“ India “ “	55,908,600	“
Total	91,549,800	“

The Commissioner very justly thinks that the 24,000,000 pounds of Indian fabrics which are imported from England should be manufactured in this country. The raw material should be brought directly from the land which produces it, and wrought into gunny-bags and burlaps in our own factories. This would not only secure to the United States the profits of manufacture, but cheapen the product and enlarge our trade with India. But perhaps it is possible for us to obviate the necessity of importing jute. It is thought that some of our own lands are suited to the production of Indian hemp. An experiment whose success would increase the agricultural and manufacturing prosperity of the country ought to be subjected to an early and exhaustive trial. It may be found that the lands of Southern Missouri are fit for the growth of this staple. The successful culture of Indian hemp in this state would confer upon St. Louis a new facility for the distribution of the products of the Mississippi Valley.

Flour ought to be one of our largest products. Our streams furnish a cheap motive power and the means of transportation. Our brands are the best in the Eastern Markets. Yet, in 1860, the product of our flour mills was less than half the quantity made in Illinois.

The annual cost of imported paper is millions of dollars. Paper factories would not only save our citizens this great expense, but convert our refuse cotton, flax, straw and sorghum into sources of wealth. The Spanish atocha or esparto—50,000 tons of which are annually imported into England for the manufacture of paper—would doubtless thrive on the sterile slopes of the Ozark range, and become an important industrial interest.

After the completion of the Pacific Railroad, St. Louis will become an entrepot of the precious metals extracted from the mines of the Rocky Mountains. Then, if the interests of the West are consulted, the National Government will establish in this city a branch mint, and individual enterprise will erect factories in which silver and gold will be fashioned into articles of use and ornament. In the manufacture of watches, this country has already declared its independence of Europe, and it is very strange if American ingenuity and taste cannot equal the artistic skill of the Old World in the production of jewelry.

The granites of Missouri are coarse and strong. They would make an excellent building material for stores and public edifices, but thus far the quarries have been left almost untouched. Marble has been brought to St. Louis from Vermont, and yet there are in this State numerous beds of compact, fine-grained, durable marble. The colors are various; white, blue, and yellow marbles are common. Other varieties are clouded, mottled with pink and purple, veined with spar, and capable of high polish.

A fine lithographic stone is found in Macon county. A native specimen which is an excellent substitute for the foreign article has recently been exhibited in this city. Bavaria may find a rival in Missouri. If the rest of the quarry proves to be as good as the sample, it will be a valuable element in the resources of the State. Lithographic stone is now selling in this market at from 10 to 30 cents a pound. Large blocks are very expensive.

Missouri ought to manufacture her own paints. The material is abundant. Blue, pink, purple, red, yellow and white paints can be made from the mineral which our own soil contains. White lead and the oxyd of zinc can be made in illimitable quantities from our own materials. The supply of ochres, barytes, uranium, manganese, cobalt, red chalk, China clay and *terra di Siena* exceeds any probable demand for the manufacture of paints.

Fire-clay, rivaling the best deposits of Europe, is found within four miles of the St. Louis Court House. The bed is fifteen feet thick, and very extensive. An analysis shows the following elements:

Silica	53,94
Alumina, with some peroxide of iron.....	33,73
Lime.....	1,17
Magnesia.....	a trace
Water.....	10,94
Total.....	99,78

Fire-brick made of this clay is capable of resisting very high temperatures. The excellence of the material recommends it for retorts, alembics, crucibles, and furnaces. The kilns of this manufacture ought to be far more numerous.

Formerly fire-rock was brought from remote States for the bloomaries at Iron-ton. This fire-rock, imported at a very heavy expense, seldom lasted more than five months. But a few years ago, a geological examination discovered a superior quarry in the

immediate vicinity of Iron-ton. This fire-rock is very refractory, and often resists the heat of the furnaces for 17 months.

Missouri is adapted to the manufacture of furniture and agricultural implements. Lumber and transportation are cheap. St. Louis should be the factory and emporium of every kind of wood-work which the house and the farm require. It should manufacture everything from a chair to a piano—from a hand-rake to a patent reaper—from a wagon to a rail-car. In 1860, the value of the furniture and agricultural machinery produced in Missouri, Illinois, and New York, was respectively \$483,000, \$3,425,000, and \$10,600,000. This branch of manufactures, which is destined to be a prominent industry in Missouri, will yet increase the capital of the State by an annual product of millions of dollars.

Adepts consider the plastic clay which is found at Commerce fully equal to that of Devonshire. It is as fine and almost as white as flour. The best potter's clay and kaolin exist in quantities that preclude the idea of exhaustion. All this State needs to become famous for its crockery and queen's ware is skilful labor from the potteries of Europe. The materials and capital for the manufacture of earthen ware and porcelain are abundant. Art alone is requisite.

Near Ste. Genevieve there is a bank of saccharoidal sand which is twenty feet in height, and miles in extent. The mass is inexhaustible. Two analyses give the following result:

Silica.....	98,81	99,02
Lime.....	0,92	0,98

The sand is very friable and nearly as white as snow. It is not oxydized or discolored by heat, and the glass made from it is clear and unstained. One firm in this city has annually exported more than 3,500 tons of this sand to the glass manufactories of Wheeling, Steubenville and Pittsburg. The possible benefit which this industry might confer upon St. Louis may be inferred from the statistics of the glass manufactories of Pittsburg. In 1866, in the exclusive manufacture of bottles and window panes,

The number of men and boys employed was.....	1,800
“ “ “ tons of silica consumed.....	242,000
“ amount of annual wages.....	\$1,396,500
“ value of annual product	\$2,160,000

There are also 19 manufactories of flint glass in which

The number of workmen is.....	2,300
“ amount of weekly wages	\$19,000
“ value of the factories.....	\$1,298,000
“ number of bushels of coal.....	2,095,800
“ worth of yearly product	\$2,600,000

There are in all 35 glass-works, employing a capital of \$6,800,000

A large portion of the silica used in the glass-factories of Pittsburg is carried from Missouri. Instead of incurring the expense of two transportations and paying to distant establishments the cost of production, our own factories ought to meet all our domestic wants and supply the markets of the West.

There have been repeated instances of the importation of lead from New York into Missouri. While the earth beneath our feet is rich with incalculable masses of galena, we satisfy the demands of our internal commerce by importations from the Atlantic frontier. There is no article made of lead that ought not to be produced in our own factories. It is a reproach to our State that the orders of our lead market should be filled one thousand miles from its own metropolis. The few manufacturers who are converting our native ore into the commodities of commerce are rapidly enriching themselves.

Our iron manufactures are altogether inadequate to meet the wants of Missouri. With three mountains of iron in our midst, we import almost all our hardware. Ore yielding 56 per cent. of pure iron can be bought at Pilot Knob for \$1.50 per ton. At St. Louis, the price is \$3.50 a ton. This ore is carried to Pittsburg, manufactured into nails, reshipped to our market, and sold, exclusive of freight, for \$125 a ton. A ton of pig iron is sold to a Boston manufacturer for \$65. It is shipped to its destination by way of New Orleans. At the Eastern factory it is wrought into files and then sent back to the starting point. One-half of the material is lost in the process of manufacture, but the half-ton of files costs the St. Louis merchant more than \$1,000.

St. Louis imports railroad iron from Cambria, Pa. The cost at the works is \$85 a ton: the freight to St. Louis is \$20 a ton. Hence our merchants are paying more than \$100 a ton for railroad iron which home manufactories ought to supply at one-third of this cost. The Union Pacific has already expended \$2,200,000 for rails. Two years ago, this Company paid for rails, delivered at their destination, \$140 a ton. The present price is \$120 a ton. It is estimated that the railroads of Missouri will need, during the year 1867, 50,000 tons of railroad iron. This will cost, at the low average of \$100 a ton, \$5,000,000. The expenditure of so large a sum in our own foundries would save freight, pay the price of manufacture to our own machinists, foster domestic industries, and invigorate the business activities of the city. These are only representative facts. Hundreds of such illustrations might be presented. Our iron-mills ought to be equal to our resources. With coal and wood abundant and cheap, with masses of ore which centuries cannot exhaust, St. Louis, or its vicinity, ought to be the great central machine-shop of the West. Our iron-works should rival those of Pittsburg, Birmingham, and Sheffield. The importation of iron manufactures into Missouri should speedily cease. Every kind of tools and machinery, every article of iron or steel, from the hair spring of a watch to the largest engine, from a nail to a 20-inch columbiad, should be fashioned in our own establishments.

Sugar, if not a necessity, is one of the prime luxuries of life. The quantity of sugar consumed in the United States in 1865 was about 800,000,000 pounds. New York, whose refineries exceed in capacity of production those of all the rest of the country, compels the other States to pay tribute to her enterprise. But in this branch of manufacture, St. Louis has made creditable progress. Under

prudent and sagacious management, the St. Louis Refinery—to whose able President I am indebted for the subsequent facts—has expanded into an establishment whose annual transactions amount to more than \$3,000,000. In 1866, it refined 22,000,000 pounds of raw sugar. The cost of the sugar imported into the United States in 1866 was—exclusive of the import of three cents a pound payable in coin—\$40,000,000 in gold. Missouri will doubtless be able to co-operate with the North West in preventing this large export of treasure.

France and Germany manufacture most of the sugar which they use from beets of domestic growth. This sugar enjoys no immunities. It is secured against foreign competition by no protective tariff. It is subject to the same duties as the product of the tropic cane. And yet it not only sustains itself, but successfully competes with the sugars of Cuba and Java. Of the present crop, 100,000,000 pounds will be exported from France to England. There is no need of going to Havana for our sugars. Our Western prairies can equal the saccharine riches of the Indies. They yield as fruitful crops of the sugar beet as France or Germany. Analyses made at Chicago, and at Washington by the Agricultural Bureau, show that the American beet contains as large a percentage of pure sugar as the European beet. It has also been ascertained that the American beet can, in high latitudes, be preserved through the winter uninjured. A company, with a capital of \$160,000 has purchased 2,000 acres of land in Northern Illinois for the purpose of raising beets and manufacturing sugar. The experiment will certainly succeed, if the managers are careful to procure proper machinery, skilful labor and scientific supervision. The quantity of beet sugar which the West is capable of producing may be calculated from the estimated crop of foreign countries in 1865 :

Holland	10,000,000 pounds.
Poland and Sweden.....	30,000,000 “
Belgium	55,000,000 “
Russia	100,000,000 “
Austria	190,000,000 “
Zoll Verein	370,000,000 “
France	510,000,000 “
The aggregate	1,265,000,000 “

is more than one-third of the annual consumption of Europe. In 1866, the sugar crop of France was 540,000,000 pounds.

A cultivation of the sugar beet commensurate with the area adapted to its growth would add hundreds of millions of dollars annually to the wealth of the West. In the development of this new growth, Missouri ought actively to participate. The mildness of our climate is the only obstacle to success. The temperature must be sufficiently cold to prevent germination during the winter months. If the beet sprouts, it becomes unfit for the manufacture of sugar. Our low latitude does not preclude the raising of the beet, and if our Winters are unfavorable to its saccharine qualities,

the crop can be shipped to manufactories further North. Apparently nothing can prevent the culture of the beet from becoming one of the most profitable resources of Missouri. Beet sugar of domestic manufacture is not subject to any excise. Last year, a company of Germans, in Livingston county Illinois, engaged in the manufacture of beet sugar. Mr. Bender gives the following results of the experiment. More than 4,000 tons of beets were raised from 400 acres of land. The cost of cultivation was less than \$4 a ton. The varieties of beet were the "Imperial" and "White Silesian". The juice contained from 9 to 13½ per cent. of sugar. The beets yielded 7½ per cent. of superior raw sugar, or 5½ per cent. of a quality fully equal to the refined "B" sugars of New York brand. If better processes of manufacture had been used, this crop of beets would have produced 450,000 pounds of refined sugar. The period of granulation varied from 27 to 72 hours. This experiment, conducted under grave difficulties, justifies sanguine hopes of American success in the manufacture of beet sugar. The French, who make \$50,000,000 worth of beet sugar annually, claim that the yield of beets is less fluctuating and more profitable than that of sugar cane.

Sorghum, too, is rich in saccharine elements. From its easy cultivation and great productiveness, this vegetable may yet become one of our most fruitful sources of domestic sugars. The yield is from 120 to 350 gallons of juice per acre. By the aid of late chemical discoveries, the saccharine matter can now be economically granulated. Sugar and syrup, refined by the Clough process, are destitute of the peculiar acrid taste which distinguishes sorghum. If sugar can be manufactured from this material as cheaply as from cane or beet, then sorghum will at once become one of the heaviest and most valuable staples of the State. The quantity of sorghum which Missouri can produce is almost illimitable.

By an improved process of recent discovery, an excellent syrup can be profitably made from corn. A bushel of corn yields three gallons of syrup. The residuum is useful for fodder. If the chemist could only convert starch into sugar, he could transmute our cereals into a wealth surpassing the golden miracles of Midas. Corn would no longer be used for fuel. But sugar can be made from the juice of the cornstalk. There is now a specimen of this kind of sugar in the Laboratory of Washington University. It is not grape but genuine cane sugar. The discoveries of chemistry may yet render this an extensive and lucrative manufacture. But, at present, there is no probability that corn will supplant the cane and beet in the production of sugar.

An exclusively agricultural State never reaches the highest material prosperity. The wealth of nations is largely dependent upon variety of industries. A diversity of occupations creates a higher social intelligence, a more rapid interchange of ideas among the members of a community, better markets, a quicker circulation of money, greater economy of *matériel*, and ampler internal resources. The superintendent of the Cambria Iron Works, at

Johnstown, Pa., recently communicated to the Commissioner of Internal Revenue some very significant and illustrative statistics.

The quantity of food annually consumed by the population dependent upon the company is:

Beef cattle.....	2,000 head	Swine.....	4,000 head
Sheep.....	3,000 „	Flour.....	20,000 bbls.

Johnstown furnishes a ready market for all kinds of agricultural products. The supply of butter, eggs, fruits and vegetables is not equal to the demand. Large quantities are imported from the neighboring markets. Unimproved land within seven miles of the Cambria furnaces is worth from \$150 to 300 per acre. Similar land, lying beyond the influence of the Iron Works, is worth but \$20 per acre. The effect of this manufactory upon the value of real estate is perceptible for fifty miles. In 1864 and 1865, this establishment paid to its workmen \$2,995,270. As the earnings of a manual laborer are mostly expended upon the means of living, a large proportion of this great aggregate must have gone into the pockets of the adjacent farmers.

This instance may be taken as a general illustration of the influence of any kind of manufactory upon a neighborhood. Real estate and the products of the farm are always lowest where manufactories do not exist. Hence the people of Missouri are buying the manufactures of other States at the highest prices, and paying for them with agricultural productions at the lowest rates. It does not require a very profound study of political economy to ascertain that it is not an enriching process to purchase costly foreign fabrics with cheap domestic harvests. With an abundance of raw material at home, we are paying external manufacturers high prices for their goods and incurring the heavy expense of transportation. St. Louis annually imports from Boston alone about \$5,000,000 worth of boots and shoes. Instead of this outlay, other communities ought to be tributary to our own shoe factories. We are now paying out what other States ought to pay in. The great value which industry adds to material is all lost to us. The cost of production impoverishes us in just the proportion in which it enriches others.

Different kinds of manufactories utilize the various raw material of the State. At present, only the leading staples can bear the cost of transportation. Many articles of economic value are wasted, simply because there is no home consumption. It does not pay to send them to a remote market—the freight consumes all the profit. Missouri loses millions of dollars every year by this waste of available material. In a community where manufactories are numerous and varied, no commodity is lost. Every kind of raw material which has a commercial value commands its price and is fabricated into articles for the use of man. A thousand substances which home manufactories could transform into useful products now perish unused and worthless.

The gravest arguments of political economy urge Missouri to become a manufacturing State. By the adoption of this policy, we should enhance the value of real estate, raise the price of farm

products, furnish employment to thousands of artizans, utilize all our raw material, coin into wealth the labor of production, pay to our own workmen the cost of fabrication, save the expense of transportation from remote manufactories, improve our own markets, secure the golden patronage of neighboring States, enlarge the amount and quicken the activity of capital, increase the operations and profits of agriculture and commerce, diffuse a knowledge of the arts, and promote intercourse, exchange of ideas, and the progress of Missouri to material greatness.

ST. LOUIS THE COMMERCIAL CENTRE OF NORTH AMERICA.

St. Louis is ordained by the decrees of physical nature to become the great inland metropolis of this continent. It can not escape the magnificence of its destiny. Greatness is the necessity of its position. New York may be the head, but St. Louis will be the heart of America. The stream of traffic which must flow through this mart will enrich it with alluvial deposits of gold. Its central location and facilities of communication unmistakably indicate the leading part which this city will take in the exchange and distribution of the products of the Mississippi Valley. St. Louis is situated upon the west bank of the Mississippi, at an altitude of 400 feet above the level of the sea. It is far above the highest floods that ever swell the Father of waters. Its latitude is 38 deg. 37 min. 28 sec. north, and its longitude 90 deg. 15 min. 16 sec. west. It is 20 miles below the mouth of the Missouri, and 200 above the confluence of the Ohio.

				Miles.
Distance	by river	from St. Louis	to Keokuk is.....	200
"	"	"	Burlington.....	260
"	"	"	Rock Island	350
"	"	"	Dubuque	470
"	"	"	St. Paul	800
"	"	"	Cairo	200
"	"	"	Memphis	440
"	"	"	Vicksburg	830
"	"	"	New Orleans.....	1,240
"	"	"	Louisville	580
"	"	"	Cincinnati.....	720
"	"	"	Pittsburgh.....	1,200
"	"	"	Leavenworth.....	500
"	"	"	Omaha	800
"	"	"	Sioux City.....	1,000
"	"	"	Fort Benton	3,100

Distance by rail from St. Louis to Indianapolis	200
“ “ “ Chicago	280
“ “ “ Cincinnati	340
“ “ “ Cleveland	470
“ “ “ Pittsburgh	650
“ “ “ Buffalo	650
“ “ “ New York	1,000
“ “ “ Lawrence	320
“ “ “ Denver	880
“ “ “ Salt Lake	1,200
“ “ “ Virginia City	1,900
“ “ “ San Francisco	2,300

St. Louis very nearly biseects the *direct* distance of 1,400 miles between Superior City and the Balize. It is the geographical centre of a valley which embraces 1,200,000 square miles. In its course of 3,200 miles, the Mississippi borders upon Missonri 470 miles. Of the 3,000 miles of the Missouri, 500 lie within the limits of our own State. St. Louis is mistress of more than 16,500 miles of river navigation.

This metropolis, though in the infancy of its greatness, is already a large city. Its length is about eight miles, and its width three. Suburban residences, the outposts of the grand advance, are now stationed six or seven miles from the river. The present population of St. Louis is 204,300. In 1865, the real and personal property of the city was assessed at \$100,000,000, and in 1866 at \$126,877,000.

St. Louis is a well built city, but its architecture is rather substantial than showy. The wide, well paved streets, the spacious levee, and commodious warehouses; the mills, machine shops, and manufactories; the fine hotels, churches, and public buildings; the universities, charitable institutions, public schools and libraries, constitute an array of excellences and attractions of which any city may justly be proud. The Lindell and Southern Hotels are two of the largest and most magnificent structures which the world has ever dedicated to public hospitality. The Lindell is itself a village.*

The appearance of St. Louis from the eastern bank of the Mississippi is impressive. At East St. Louis, the eye sometimes commands a view of 100 steamboats lying at our levee. Notwithstanding the departure of more than 40 boats for Montana, there are at this date 70 steamers in the port of St. Louis. A mile and a half of steamboats is a spectacle which naturally inspires large views of commercial greatness. The sight of our levee, thronged with busy merchants and covered with the commodities of every clime, from the peltries of the Rocky Mountains to the teas of China, does not tend to lessen the magnitude of the impression.

*On the 30th of last March, this superb edifice was burned to the ground. But the public-spirited citizens of St. Louis have formally resolved to restore it in all its original magnificence. More than \$800,000 have already been raised for this object.

The growth of St. Louis, though greatly retarded by social institutions, has been rapid. The population of the city was in

1769	891	1837	12,040
1795	925	1840	16,469
1810	1,400	1844	34,140
1820	4,928	1850	74,439
1828	5,000	1852	94,000
1830	5,852	1856	125,200
1833	6,397	1859	185,587
1835	8,316	1866	204,327

In 1866, 1,400 buildings, worth \$3,500,000, were erected in St. Louis. The total number of structures in the city is now about 20,000, and their approximate value is \$50,000,000.

At the present rate of decennial increase, St. Louis in 1900 would contain more than 1,000,000 inhabitants. This number certainly seems to exceed the present probability of realization, but the future growth of St. Louis, vitalized by the mightiest forces of a free civilization and quickened by the exchanges of a continental commerce, ought to surpass the rapidity of its past development.

The Real Estate in St. Louis was in

1859 assessed at....	\$69,846,845	1863 assessed at....	\$49,409,030
1860 " "	73,765,670	1864 " "	53,205,820
1861 " "	57,537,415	1865 " "	73,960,700
1862 " "	40,240,450	1866 " "	81,961,610

In 1866, the valuation of the Real and Personal property in St. Louis on which the State and Military taxes were levied was \$126,877,000.

The amount of Duties collected at the St. Louis Custom House was in

1861	\$30,183.96	1864	\$76,448.43
1862	20,404.70	1865	586,407.47
1863	36,622.09	1866	785,652.30

The amount of imposts paid at the port of Chicago during the fiscal year ending Dec. 31, 1866, was \$509,643.39 in coin.

The duties collected during the same period at this port amounted to \$60,176.45 in currency, and 780,706.97 in gold.

Only about one-fifth of the customs levied on goods imported into St. Louis are collected at this point. St. Louis is only a Port of Delivery. The imposts upon our foreign merchandise are chiefly paid at the Ports of Entry.

The present system of foreign importation is unfavorable to the commercial interests of St. Louis. This city should be made a Port of Entry. The goods of St. Louis importers are now subjected to great delay and expense at New Orleans. The municipal authorities do not permit the merchandise to lie on the landing more than five days. If the requisite papers are not made out within that time, the goods are sent to bonded warehouses. This contingency not unfrequently occurs. The press of business or official slowness often delays the issue of the Custom House pass beyond the spec-

ified time, and then the western importer is subject to the serious expense which the drayage to the warehouse, loss of time, and frequent damage to the goods involve. The gravity of this embarrassment forces many of our merchants to pay the duties at New Orleans. This course saves delay and expense. The Revenue laws recognise no distinction between the actual payment of duties and the transportation bond. But practically there is an important difference. In case the impost is paid at New Orleans, the goods are almost always forwarded within five days; but when the merchandise is shipped under a transportation bond, the detention is very frequently ten days, and sometimes a month. In the former instance, any package can be forwarded as soon as the duty is paid; but, in the latter case, the imports cannot be dispatched to their destination till the entire shipment has passed the inspection of the Custom House. In consequence of these unjust discriminations against St. Louis, many of our largest importers, notwithstanding the inconvenience of keeping gold on deposit at New Orleans, prefer to pay the duties on their foreign goods at the Port of Entry.

An excessive and unnecessary delay at the New Orleans Custom House recently subjected one of our merchants to a loss of \$8 a ton on a shipment of iron.

Last season, another of our importers ordered a large stock of Christmas goods. The articles reached New Orleans in season, but were detained there till after the holidays. They must now be kept, with loss and deterioration, for another year; and before next Christmas, they may become comparatively worthless by changes of mode and new directions of public taste.

These examples illustrate the importance of time in commercial transactions.

The Government could easily obviate all the difficulties which our importers now experience by making St. Louis a Port of Entry. The commercial embarrassments of the present system need immediate removal. In the event of the proposed change, frauds upon the Government could be prevented by reshipping the goods at New Orleans under the eye of the Custom House authorities, keeping them during the voyage under lock and key, and, if necessary, subjecting them on the passage to the surveillance of a Revenue officer. During the rebellion, the shipments of merchandise to southern ports were placed under similar supervision. The satisfactory operation of this system, amid all the liabilities to abuse which exist in times of civil turbulence, warrants the conviction that the proposed plan would, in a period of peace, prove eminently successful.

If Congress respects commercial rights, St. Louis will soon become a Port of Entry.

From the records of the United States Assessor, it appears that in 1865 the sales of 612 St. Louis firms amounted to \$140,688,856. For the same year, the imports of this city reached an aggregate of \$235,873,875.

The manufactures of St. Louis constitute an important element in our commercial transactions. In 1860, the capital invested in

manufactures was \$9,205,205, and the value of the product was \$21,772,323. In 1866, the mills of this city made 820,000 barrels of flour.

In 1865, our receipts of grain, including flour, were 17,657,250 bushels.

" 1866,	"	"	"	20,855,280	"
" 1865,	exports	"	"	13,427,000	"
" 1866,	"	"	"	18,680,500	"

St. Louis, though the eighth city in the United States in population, ranks as seventh in the importance of its manufactures. Missouri might profitably imitate the activity of its metropolis.

The extent of our social and commercial intercourse with the rest of the world may be inferred from the postal statistics of this department. In 1865, the number of letters which passed through the St. Louis Post Office for distribution, mail, or delivery, was about 11,000,000. In 1866, the total sum of postage collected, including the sale of stamps, was more than \$195,000; and the amount of money orders paid was \$145,000. In postal importance, St. Louis is the fifth city of the Union.

The earnings of our railroads indirectly exhibit the magnitude of our trade. For the fiscal year of 1865, the total receipts of the Iron Mountain were \$424,700; North Missouri \$1,013,000; Missouri Pacific and Southwest Branch, \$1,939,000; Hannibal and St. Joseph, \$2,000,000. In 1866, the earnings of the Missouri Pacific were \$2,670,000. The returns of the Union Pacific for November 1866 were \$77,869. The Directors estimate their monthly receipts for 1867 at \$100,000.

In 1865, the total number of passengers, by river or rail, who made St. Louis their destination, or a point of transit, amounted to 1,180,000; and, in 1866, 1,250,000.

In 1866, the number of houses and firms doing business in St. Louis was 5,500, and the number of commercial licenses issued during the same year was 4,800.

The tonnage owned and enrolled in the district of St. Louis in 1865 was 97,000 tons. On the first of January 1867, the amount of our steam tonnage, exclusive of a large number of barges and canal boats which made occasional trips, was 106,600 tons, with a carrying capacity of 186,000 tons, and a value of 10,376,000.

Our commerce is aided by ample banking facilities. There are in St. Louis, in addition to 20 private banks, 38 Insurance Companies, 31 incorporated banking institutions, with an actual capital of \$15,000,000. The character of our banks stands deservedly high in the financial world. The development of the territories is bringing large deposits to our banks, creating new demands for capital, and extending the channels of circulation.

Our trade with the mountains is large and rapidly increasing. In 1865, 20 boats set out from this port for Fort Benton—which is more than 3,000 miles from St. Louis—with a total freight of 6,000,000 pounds.

In 1866, 50 boats sailed for Fort Benton, with an aggregate tonnage of 10,284 tons. In three instances the cost of assorted goods was as follows:

13 tons of merchandise.....	\$12,000
35 " "	40,000
40 " "	65,000
Mean cost per ton	1,300

The agent who furnishes these facts feels authorized by his experience in the trade of the Upper Missouri to appraise a ton of Montana merchandise at \$1,000.

The following table is an approximate estimate, based upon the preceding data, of our commerce with Montana, for the year 1866 :

Number of boats	50
" " passengers	2,500
Pounds of freight	13,000,000
Value of merchandise.....	\$6,500,000

The trade across the plains is of still greater magnitude. The overland freight from Atchison alone has increased from 3,000,000 pounds in 1861 to 21,500,000 in 1865.

The Overland Dispatch Company have courteously furnished me with estimates, founded upon their own transactions, of our total commerce with the territories in 1865. These figures do not include the Fort Benton trade.

Number of passengers east and west by overland coaches	4,800
" " " " by trains and private conveyances	50,000
Number of wagons	8,000
" " cattle and mules	100,000
Pounds of freight to Plattsmouth	3,000,000
" " Leavenworth City.....	6,000,000
" " Santa Fé	8,000,000
" " St. Joseph	10,000,000
" " Nebraska City	15,000,000
" " Atchison	25,000,000
Government freight	50,000,000

Total number of pounds.....117,000,000

Amount of treasure carried by express	\$3,000,000
" " " by private conveyance.....	30,000,000

The Overland Express charge 3 per cent. for the transportation of bullion. This high commission and the hostility of the Indian tribes induced many miners to send their gold East by the way of San Francisco to Panama.

In 1866, the total assay of bullion in the United States was \$81,389,540. Of this aggregate, \$73,032,800 came from the Pacific and Rocky Mountain mines. Upon the usual estimate that 25 per cent. of the gold and silver escapes assay, the entire product of the country in 1866 was \$100,000,000. The increase of population in the gold regions, the richness of recent discoveries, and greater activity in mining operations indicate a still larger aggregate in 1867.

In 1866, the westward traffic of Leavenworth amounted to \$50,000,000. This aggregate includes the Santa Fé trade, whose

value last year was about \$35,000,000. The Western trade of Nebraska City was in

1863.....	16,800,000 pounds.
1864.....	23,000,000 "
1865.....	44,000,000 "
1866.....	30,000,000 "

The freightage from this point across the Plains required, in 1865, 11,739 men, 10,311 wagons, 10,123 mules, and 76,596 oxen.

So great is the length of the overland routes that the trains are able to make but two through trips a year.

The Union Pacific Railroad already extends to Fort Harker. This materially shortens the extent of overland freightage.

Distance from St. Louis to Fort Harker.....	508 miles.
" " Fort Harker to Denver	372 "
" " " " Salt Lake City	800 "
" " " " Virginia City.....	1432 "

The length of these lines of transportation, the slowness of our present means of communication, and the magnitude of our territorial population and trade, forcibly illustrate the necessity of a Pacific Railroad.

The foregoing summaries exhibit the commerce of the Mississippi Valley with the mountains. But while St. Louis does not monopolize the trade of the gold regions, it yet sends to the territories by far the largest portion of their supplies. Even in cases where merchandise has been procured at intermediate points, it is probable that the goods were originally purchased at St. Louis.

During the rebellion, the commercial transactions of Cincinnati and Chicago doubtless exceeded those of St. Louis. The very events which prostrated our trade stimulated theirs into an unnatural activity. Their sales were enlarged by the traffic which was wont to seek this market. Our loss was their gain.

The Southern trade of St. Louis was utterly destroyed by the blockade of the Mississippi. The disruption by civil commotions of our commercial intercourse with the interior of Missouri was nearly complete. The trade of the Northern States, bordering upon the Mississippi, was still unobstructed. But the merchants of St. Louis could not afford to buy commodities which they were unable to sell, and country dealers would not purchase their goods where they could not dispose of their produce. Thus St. Louis, with every market wholly closed or greatly restricted, was smitten with a commercial paralysis. The prostration of business was general and disastrous. No comparison of claims can be just which ignores the circumstances that, during the rebellion, retarded the commercial growth of St. Louis, yet fostered that of rival cities.

Nothing more clearly demonstrates the geographical superiority of St. Louis than the action of the Government during the war. Notwithstanding the strenuous competition of other cities, our facilities for distribution and a due regard for its own interests compelled the Government to make St. Louis the Western base of supplies and transportation. During the rebellion, the transactions of

the Government at this point were very large. General Parsons, Chief of Transportation in the Mississippi Valley, submits the following as an approximate summary of the operations in his department from 1860 to 1865:

Amount of Transportation.

Cannon and Caissons.....	800
Wagons.....	13,000
Cattle.....	80,000
Horses and Mules.....	250,000
Troops.....	1,000,000
Pounds of Military Stores.....	1,950,000,000

General Parsons thinks that full one half of all the transportation employed by the Government on the Mississippi and its tributaries was furnished by St. Louis.

From September 1, 1861, to December 31, 1865, General Haines, Chief Commissary of this department, expended at St. Louis, for the purchase of subsistence stores, \$50,700,000.

During the war, General Myers, Chief Quartermaster of this department, disbursed at this city, for supplies, transportation and incidental expenses, \$180,000,000.

The National exigencies forced the Government to select the best point of distribution. The choice of the Federal authorities is a conclusive proof of the commercial superiority of St. Louis.

The conquest of treason has restored to this mart the use of its natural facilities. Trade is rapidly regaining its old channels. On its errands of exchange, it penetrates every State and Territory in the Mississippi Valley, from Alabama and New Mexico to Minnesota and Montana. It navigates every stream that pours its tributary waters into the Mississippi. It visits the islands of the sea, traverses the ocean, and explores foreign lands.

Before the war, almost all the Western trade in coffee and sugar was carried on by way of New Orleans. The interruption of traffic, by the blockade of the Mississippi River, changed the channels of commerce. By the necessities of the country, trade was forced into unnatural courses. New York, by its limitless capital and enterprise, has obtained a brief control over a trade that rightfully belongs to the West. As soon as the country regains its normal condition and commerce resumes its natural flow, the West will inevitably assert its former and legitimate ascendancy in this branch of business. Most of the coffee used in the West is brought from Rio Janeiro. Water carriage is always the cheapest means of transportation. The rail from New York cannot compete with the river from New Orleans. Besides, the Gulf route is the shortest distance between St. Louis and Rio Janeiro. The cost, then, of importing Rio Coffee to this point is much less by New Orleans than by New York. An urgent necessity exists for the establishment of lines of steamers between New Orleans and South American ports.

A direct trade with the West Indies and South America would, from our superior facilities of transportation, not only place the control of the grocery business of the Northwest in our hands,

but also greatly enlarge our exportations. The West consumes far more coffee proportionately than the East. South America uses large quantities of Western flour. There would then be a steady and growing interchange of commodities between these countries.

Missouri flour is the best in the American market. This is an important advantage in favor of St. Louis. It is a well-ascertained fact that the flour made from grain grown in this latitude bears the voyage to South American ports better than any other. The experience of exporters verifies this assertion. Our flour is then not only the finest in the United States for home consumption, but also the best for exportation to tropical countries.

St. Louis ought to cultivate more intimate commercial relations with Brazil. Prior to our acquisition of Russian America, the area of this country was 500,000 square miles larger than that of the United States. Its present population is nearly 10,000,000. Of its principal maritime cities,

Para contains	30,000 inhabitants.
Pernambuco	80,000 "
Bahia	130,000 "
Rio Janeiro	400,000 "

The exports of Brazil are coffee, hides, sugar, caoutchouc, rosewood, mahogany, Brazil wood, cinchona, logwood, cotton, rice, sarsaparilla, sassafras, ipecacuanha, cacao, vanilla, cloves, cinnamon, and tamarinds.

In 1856, the value of the commodities imported from Brazil into the United States was

Brazil wood	\$32,000
" nuts	43,000
Rosewood	81,460
Hair	138,240
Sugar	513,450
India rubber	771,320
Raw hides	1,930,220
Coffee	16,091,700

In 1857, this country imported from Brazil 197,000,000 pounds of coffee, worth \$17,980,000. In the same year, Brazil exported to foreign markets 256,000,000 pounds of sugar.

In exchange for these valuable commodities, Brazil needs lard, pork, hams, flour, pine lumber, agricultural implements, textile fabrics, and other manufactures. These articles are the chief staples of western growth and production. The Mississippi Valley is able to supply most of the commercial wants of Brazil. St. Louis, as the main distributing point of the West, ought to take the lead in this grand system of mercantile exchanges. A vast commerce must soon spring up between the metropolis of this Valley and the ports of South America. But, at present, our exports to Brazil are entirely disproportioned to our ability to meet the commercial wants of that country. In 1854—55, the trade of England with South America was five times as large as that of the United States.

In 1860, the value of our American imports from Brazil was \$20,000,000

"	"	"	exports to	"	"	6,000,000
---	---	---	------------	---	---	-----------

These figures show that this country is not a successful competitor for the rich trade of South America. More energetic rivals are enriching themselves with the opulence of this commerce.

The wants of the United States and Brazil are complementary. Each country needs the productions of the other. The West is the fruitful and main source of those commodities which South America requires. St. Louis, as the chief emporium of the Mississippi Valley, is able, by the vast expansion which it can cause in this tropic trade, to turn the commercial balance in favor of the United States and itself become the central distributing point of Brazilian staples.

But St. Louis can never realize its splendid possibilities without effort. The trade of the vast domain lying east of the Rocky Mountains and south of the Missouri river is naturally tributary to this mart. St. Louis, by the exercise of forecast and vigor, can easily control the commerce of 1,000,000 square miles. But there is urgent need of exertion. Chicago is an energetic rival. Its lines of railroad pierce every portion of the Northwest. It draws an immense commerce by its network of railways. The meshes which so closely interlace all the adjacent country gather rich treasures from the tides of commerce. Chicago is vigorously extending its lines of road across Iowa to the Missouri river. The completion of these roads will inevitably divert a portion of the Montana trade from this city to Chicago. The energy of an unlineal competitor may usurp the legitimate honors of the imperial heir.

St. Louis can not afford to continue the masterly inactivity of the old *regime*. A traditional and passive trust in the efficacy of natural advantages will no longer be a safe policy. St. Louis must make exertions equal to its strength and worthy of its opportunities. It must not only form great plans of commercial empire, but must execute them with an energy defiant of failure. It must complete its projected railroads to the mountains, and span the Mississippi at St. Louis with a bridge whose solidity of masonry shall equal the massiveness of Roman architecture, and whose grandeur shall be commensurate with the future greatness of the Mississippi Valley. The structure whose arches will bear the transit of a continental commerce should vie with the great works of all time, and be a monument to distant ages of the triumph of civil engineering and the material glory of the Great Republic.

Since these sentences were written, a company, composed of men of large means and sterling integrity, has been incorporated for the purpose of erecting a bridge across the Mississippi at this point. The executive and financial ability of its members is a guarantee of efficient action and an early accomplishment of this great work. The length of the bridge, together with its approaches, will be about 3500 feet, and the probable cost \$5,000,000. The material of the structure will be steel. Chas. K. Dickson is President of the Company, and James B. Eads, the distinguished inventor, is Chief Engineer.

The initial steps for the erection of a bridge across the Missouri at St. Charles have already been taken. The work should be pushed forward with untiring energy to its consummation.

The iron, stone and timber necessary for these structures can be obtained within a few miles of St. Louis, and the greater part of the material can be transported by water. The construction of public works whose cost would be millions of dollars would afford employment to thousands of laborers, and give fresh impulse to the prosperity of St. Louis.

A full and persistent presentation of the superior claims of Carondelet ought to induce the Government to establish a naval station at that point. The supply of labor and *materiel* which a navy yard would require would be another source of wealth to Missouri and its metropolis.

The effect of improvements upon the business of the city may be illustrated by the operations of our city elevator. The elevator cost \$450,000, and has a capacity of 1,250,000 bushels. It is able to handle 100,000 bushels a day. It began to receive grain in October 1865. Before the first of January 1866, its receipts amounted to 600,000 bushels, 200,000 of which were brought directly from Chicago. The total receipts at the elevator in 1866 were 1,376,700 bushels. Grain can now be shipped, by way of St. Louis and New Orleans, to New York and Europe twenty cents a bushel cheaper than it can be carried to the Atlantic by rail.

The facilities which our elevator affords for the movement of cereals have given rise to a new system of transportation. The Mississippi Valley Transportation Company has been organized for the conveyance of grain to New Orleans in barges. Steam tugs of immense strength have been built for the use of the company. They carry no freight. They are simply the motive power. They save delay by taking fuel for the round trip. Landing only at the large cities, they stop barely long enough to attach a loaded barge. By this economy of time and steady movement, they equal the speed of steamboats. The Mohawk made its first trip from St. Louis to New Orleans in six days, with ten barges in tow. The management of the barges is precisely like that of freight cars. The barges are loaded in the absence of the tug. The tug arrives, leaves a train of barges, takes another and proceeds. The tug itself is always at work. It does not lie at the levee while the barges are loading. Its longest stoppage is made for fuel. The power of these boats is enormous. The tugs plying on the Minnesota river sometimes tow 30,000 bushels of wheat apiece. The freight of a single trip would fill 85 railroad cars.

Steamboats are obliged to remain in port two or three days for the shipment of freight. The heavy expense which this delay and the necessity for large crews involve is a grave objection to the old system of transportation. The service of the steam tug requires but few men, and the cost of running is relatively light. The advantages which are claimed for the barge system are exhibited by the following table:

	Tug and barges.	Steamboats.
Stoppage at intermediate points.....	2 hours	6 hours.
“ “ terminal “	24 “	48 “
Crew	15	50
Tonnage.....	25,000 tons	1,500 tons.
Daily expense	\$200	\$1,000
Original cost.....	\$75,000	\$100,000

In addition to the ordinary precautions against fire, the barges have this unmistakable advantage over steamboats, they can be cut adrift from each other, and the fire restricted to the narrowest limits. The greater safety of barges ought to secure for them lower rates of insurance. The barges are very strongly built, and have water tight compartments for the movement of grain in bulk. The transportation of grain from Minnesota to New Orleans by water costs no more than the freightage from the same point to Chicago. After the erection of a floating elevator at New Orleans, a boat load of grain from St. Paul will not be handled again till it reaches the Crescent City.

At that port, it will be transferred by steam to the vessel which will convey it to New York or Europe. The possible magnitude of this trade may be inferred from the fact, that in 1865 Minnesota alone raised 10,000,000 bushels of wheat. Three quarters of this harvest could have been exported, if facilities of cheap transportation had offered adequate inducement. In 1866, higher prices—which produced the same practical result as cheaper freightage—led to the exportation of 8,000,000 bushels. Some of this grain belonged to the crop of the preceding year. But this fact does not at all affect the question of carriage.

From the 1st of May to the 25th of December 1866, the tow boats of this city transported 120,000 tons of freight. This new scheme of conveying freight by barges bids fair to revolutionize the whole carrying trade of our Western waters. It will materially lessen the expense of heavy transit, and augment the commerce of the Mississippi River in proportion to the reduction it effects in the cost of transportation. The improvement which facilitates the carriage of our cereals to market, and makes it more profitable for the farmer to sell his grain than to burn it, is a national benefit. This enterprise, which may yet change the channel of cereal transportation, shows what great results a spirit of progressive energy may accomplish.

The mercantile interests of the West imperatively demand the improvement of the Mississippi and its main tributaries. This is a work of such prime and transcendent importance to the commerce of the country, that it challenges the co-operation of the Government. A commercial marine which annually transfers tens of millions of passengers, and cargoes whose value is hundreds of millions, ought not to encounter obstructions which human effort can remove. The yearly loss of property, from the interruption of communication and wreck of boats, reaches a startling aggregate.

For the accomplishment of an undertaking so vital to its municipal interests, St. Louis should exert its mightiest energies. The

prize for which competition strives is too splendid to be lost by default. The Queen City of the West should not voluntarily abdicate its commercial sovereignty.

If the emigrant merchants of America and Europe, who recognize in the geographical position of St. Louis the guarantee of mercantile supremacy, will become citizens of this metropolis, they will aid in bringing to a speedier fulfilment the prophecies of its greatness. The current of Western trade must flow through the heart of this valley.

In the march of progress, St. Louis will keep equal step with the West. Located at the intersection of the river which traverses zones, and the railway which belts the continent, with divergent roads from this center to the circumference of the country, St. Louis enjoys commercial advantages which must inevitably make it the greatest inland emporium of America. The movement of our vast harvests and the distribution of the domestic and foreign merchandise required by the myriad thousands who will, in the near future, throng this valley, will develop St. Louis to a size proportioned to the vastness of the commerce it will transact. This metropolis will not only be the center of Western exchanges, but also, if ever the seat of Government is transferred from its present locality, the capital of the nation.

St. Louis, strong with the energies of youthful freedom, and active in the larger and more genial labors of peace, will greet the merchants of other States and lands with a friendly welcome, afford them the opportunities of fortune, and honor their services in the achievement of its greatness.

RAILROADS OF MISSOURI.

The railroad system of Missouri is exhibited in the following tabular statement:

Railroads.	Miles.
Cairo and Fulton.....	37
Missouri Valley.....	52
Atlantic and Pacific	88
Iron Mountain	87
North Missouri	168
Hannibal and St. Joseph	233
Missouri Pacific	283
Total length of railroads in operation within the State	948

A vast enlargement of our railroad facilities is contemplated. More than 10,000 miles of new lines have been projected on the west side of the Mississippi. A quarter of a century may elapse before the completion of these extensions; yet the very conception of them shows that the public mind is alive to the importance of

ampler means of communication with the States and Territories of the far West. Most of these roads have received grants of land from the Government, and upon some of the lines the work is already far advanced. The terminal points of the most important roads are:

Superior City and New Orleans, *via* St. Paul, St. Louis and Memphis.

St. Louis and San Francisco, *via* Kansas City and Salt Lake.

Kansas City and Fort Benton, *via* Omaha.

Leavenworth and Galveston, *via* Lawrence.

St. Louis and San Francisco, *via* Albuquerque.

HANNIBAL AND ST. JOSEPH RAILROAD.

This road is 233 miles long. It traverses one of the finest sections of the State. It gives an outlet to a region rich in agricultural productions. It is of prime importance not only to local business, but to that through trade with the far West whose initial point lies north of St. Louis. It is an incalculable advantage to North Missouri. Without it, the products of the interior would lose much of their value.

This road has received a large grant of public lands. The tract still owned by the company contains nearly 500,000 acres. These lands are rich in agricultural and mineral wealth. They are situated in a temperate and healthful climate. They are accessible and cheap. The price varies from \$2.40 to \$15.00 an acre. To the settler who is unable to pay cash, a credit of two or even ten years is granted. No defect of title impairs the value of these lands. The act of Congress, vesting in this company the right of ownership, is an absolute guarantee of title. The fare of immigrants who pass over the Hannibal and St. Joseph railroad in quest of a location is refunded in the event of their buying lands of the Company. The liberality of the terms of payment, as well as the essential value of the property, ought to procure an early sale of these valuable freeholds.

North Missouri is largely peopled with settlers from New England. Colonies of Eastern men are forming communities throughout this section of the State, and reproducing the institutions of New England upon the prairies of the West. Some large-minded and opulent Eastern gentlemen, who hold their wealth in trust for the accomplishment of beneficent objects, are generously fostering the growth of Western culture. Prominent among these is Nathaniel Thayer, Esq., of Boston. Several years ago, he endowed a Professorship in Washington University, and now, in liberal co-operation with other gentlemen, he has organized the "Thayer Institute" at the town of Kidder. It is the design of the founders to establish an institution of sound learning, and to insure its life by an ample endowment.

The educational facilities which exist in the New England towns along the line of the Hannibal and St. Joseph railroad are justly entitled to the consideration of Eastern men who are seeking homes in Missouri.

NORTH MISSOURI RAILROAD.

This road runs from St. Louis to Macon. The length is 168 miles. It was finished in 1859 and cost \$7,638,195. It will be extended during the present year to the Iowa State line. The distance from Macon is 65 miles. The North Missouri will ultimately connect by means of the northern lines with all the large towns upon the upper Mississippi, and by its junction with the Cedar Rapids and Iowa Central railroads enjoy the advantage of a double connection with St. Paul. A branch of this road from Moberly to Leavenworth is now under construction. It is 147 miles long. It is to be completed next year. It will run through Brunswick, Richmond, Kansas City and Leavenworth; and connect, by the extension of the Missouri Valley railroad with Council Bluffs and Sioux City.

Another branch running from Centralia to Columbia—a distance of 22 miles—will be finished by the middle of next July. This road lies wholly within the limits of Boone County.

The North Missouri is now dependent for its Western connections upon the Hannibal and St. Joseph railroad. But after the completion of the West Branch from Moberly, it will have a continuous independent line to Leavenworth. With its extensions, it will be the longest railroad in Missouri. There are no richer lands in the State than those which this road traverses.

The railroad bridge at St. Charles is now in process of erection. Its length will be 1500 feet, and its ultimate cost \$500,000. It will be finished in 1868.

The gauge of the North Missouri is now 5 feet 6 inches. During the present summer the gauge will be changed to 4 feet 8½ inches. This is the width of the Hannibal and St. Joseph track, of the Union Pacific, and of all the railroads in Iowa. After this alteration is made, the North Missouri can make all its northern and western connections without change. The same train can run from St. Louis to Leavenworth. The 18 new engines which the Company are now putting on the road increase the number of their locomotives to 42.

On the main line to Macon, the amount of private and municipal subscription was \$2,137,400, and the loan of State credit \$4,350,000.

By subsequent legislation, the State released its lien upon the road for the \$4,350,000, and permitted the Company to issue first mortgage bonds for \$6,000,000. The holders of these bonds now possess the first lien on the completed road, and are still further secured by a first mortgage on the extension to the Iowa State line, on the new West Branch, and on the St. Charles bridge.

By the terms of the law, the \$6,000,000 are appropriated to specific objects:

For the erection of the St. Charles Bridge.....	\$500,000
“ “ extension to the Iowa State line	1,500,000
“ “ construction of the West Branch	4,500,000

When all the extensions now under contract are completed, the North Missouri will have the following length of line:

From St. Louis to Macon	168 miles
“ Moberly to Leavenworth	141 “
“ Macon to Iowa line	65 “
“ Kansas City to Leavenworth	22 “
“ Centralia to Columbia	22 “

Total length of the main line and branches 418 “

The estimated cost of these extensions will be:

From Moberly to Leavenworth	\$4,000,000
“ Macon to Iowa State line	1,266,000
“ Centralia to Columbia	500,000
St. Charles Bridge	500,000

Total cost\$6,266,000

To meet these expenses, the North Missouri has the following resources:

First mortgage 7 per cent. bonds	\$6,000,000
County and private subscriptions	1,841,000
25,000 acres of land in Chariton county	250,000
Other property	231,000

Total resources\$8,322,000

Whole cost and assets of the road.....\$15,960,195

The inequalities of a railroad impair its efficiency. They squander motive power. They augment the cost of transportation. The carrying capacity of the North Missouri is greatly enlarged by the lightness of its grades. The advantage of its comparatively level track is distinctly visible in the economy of freightage and of effective power.

From its extent and location, the North Missouri will not only facilitate trade and travel, but actively promote a denser settlement of the fertile lands through which it runs.

PACIFIC RAILROAD.*

The Pacific railroad will be prominent among the public works of all time. It will be the longest railway in the world. The main line will be 2300 miles long, and its branches 1000 miles more. A continuous track, 3400 miles in length, will unite New York and San Francisco. The cost of the rails alone will be more than \$30,000,000, and the expense of the completed road will be about \$150,000,000. A force of 20,000 pioneers is leveling this highway for a royal progress of the Great Republic. The road is now advancing at the rate of 300 miles a year. Upon the Pacific slope, the work is prosecuted with great vigor. From Sacramento, the line already extends eastward 114 miles. It is now crossing the heights of the Sierra Nevada. The passage of this range encounters great obstacles and exhibits grand triumphs of civil engineering.

* This and the “Union Pacific Railroad” are titles which do not strictly fall within the scope of an article on the “Railroads of Missouri.” But the Pacific Railroad is so intimately connected with the prosperity and development of Missouri, that the temptation to discuss it was too great for successful resistance.

The road spans profound chasms, creeps along the dizzy verge of precipices, and pierces the solid buttresses of the mountains. The sublimities of this region are scarcely inferior to the grandeurs of the Yosemite Valley.

Some of the mountains along whose base this road runs are said to be 12,000 feet in height. A recent article in the New York World furnishes some very interesting statistics of the Central Pacific railway. This road was begun in 1863. The initial point is Sacramento. This city stands at the head of navigation on the Sacramento river. The ease of communication afforded by a navigable stream obviated the necessity of beginning at San Francisco. But, under a charter authorising the construction of a railway between these two cities, 97 miles of road have been already built. The central Pacific is now finished to the crest of the Sierra Nevada. The Company intend to complete the road from

Sacramento to Virginia City.....	156 miles	in 1867
“ “ Austin.....	320 “	“ 1868
“ “ Salt Lake City.....	585 “	“ 1870

The estimated cost and equipment of the road from Sacramento to the state line of California are estimated at \$14,000,000. For 15 miles, the pathway up the ascent of the Sierra Nevada has been cut in solid granite. During the progress of the work, the daily consumption of powder was 350 kegs, worth \$1400. During the fall 1866, the working force was 8,000 Chinese. The number of horses and mules employed upon the road was 1200. This spring the Company intend to increase their industrial force to 12,000 or 15,000 men.

In 1866, the earnings of the Central Pacific were :

From Sacramento to Colfax, 62 miles, May, ...	\$65,000
“ “ “ “ June, ...	67,000
“ “ Alta, 69 “ July, ...	85,000
“ “ “ “ August, ...	112,000
“ “ “ “ September, ...	114,000
“ “ “ “ October, ...	127,000

From Sacramento to Cisco, the tariff of rates is \$9.50 for passengers, and \$14.00 a ton for freight. But even at these high prices, there is a saving of 20 per cent. on the former cost of carriage. The Express Company of Wells and Fargo charge on freight

From San Francisco to Austin, 320 miles, 50 cents in gold *per pound*.
 “ “ Salt Lake, 710 “ 75 “ “ “

In Nevada, green fir wood is \$13 a cord in gold, and the timber necessary for mining purposes costs from \$30 to \$45 per hundred. The quantity of lumber requisite for this use may be inferred from the alleged fact that the mine of Gould and Curry contains as much timber as Virginia city, a wood-built town of 15,000 inhabitants. Yet, notwithstanding the great expense of material and transportation, some of the mines of Nevada pay a monthly dividend of 2 to 5 per cent. The Gould and Curry Mining Company think that they could have saved in 1864, by the relative economy of railroad carriage, \$2,000,000 in gold. The annual cost

of transportation to Nevada is \$10,000,000. In 1866, the freight on \$6,000,000 from the East to Montana was \$2,000,000.

These facts disclose the grave difficulties which retard the growth of our Territories, and prompt the utmost vigor in the prosecution of the Pacific railroad.

Official assurance is given that the entire line will be finished in 1871. The terms of the charter require its completion by the first of July 1876.

The glory of this great achievement will chiefly belong to St. Louis. The conception of the enterprise originated in this city. The first capital was advanced by our own merchants. With rare foresight and an honorable faith in the ultimate success of their great undertaking, our public-spirited citizens persevered in despite of every discouragement and opposition, till at last popular favor and financial prosperity have crowned their efforts.

The prophecy of Benton is rapidly approaching its fulfilment. Soon the Atlantic and Pacific will be bound together by railroad ties. This colossal work will be a proud monument of American energy. Its consummation will inaugurate a new era in the history of commerce. In anticipation of its completion a New York company, with a capital of \$30,000,000, has just established a regular monthly line of steamers between San Francisco and China. The Colorado made its first voyage from San Francisco to Hong Kong in 27½ days. The mail from Japan now reaches the Pacific coast in three weeks. The journey from New York to Hong Kong, by way of London and Suez, takes 56 days; but by the Pacific Railway, the time will be only 35 days.

This inter-oceanic railroad will doubtless become the highway of travel between Europe and the Orient. Between the termini of the Pacific Railroads, there is an interval of about 750 miles. Conveyance by stage over this long and difficult line is relatively slow. Yet, notwithstanding this great impediment, England has already sent its China mail across this Continent. The economy of distance and time, the personal comfort of a passage lying wholly in the temperate zone, and the avoidance of the heat and perils of tropic seas will secure to this route the main patronage of the travel between the maritime frontiers of Europe and Asia. Time, too, is often an important element in commercial transactions. The Pacific Railroad will afford the quickest transit between the opposite borders of the Eastern hemisphere. The interchanges of merchandise of small bulk and great value will be carried on over this road. Commodities liable to be injured by the temperature of the tropics will seek the safety of this northern line of transportation. The temperate calm of Pacific waters in the latitude of San Francisco and Shanghai is an additional safeguard of life and cargo.

The Pacific railroad will be a mighty agency in the development of that vast tract of country which lies between the Rocky Mountains and the Sierra Nevada. The discovery of gold and silver in the canons of these mountains gave the initial impulse to population—the Pacific railway will accelerate the movement. While the acquisition of wealth will still be the chief motive, the facility of

reaching the mountains by means of this road will strengthen the prime incentive. Populous States and well ordered governments now exist in regions which but few years ago were only trackless solitudes. The presence of gold in the Rocky Mountains has suddenly adorned their slopes with a flourishing civilization. The lure of riches and the convenience of the railroad will people these fastnesses, and add new members to the sisterhood of States. Under the action of these twofold motives, new communities will arise. Happy homes, social order, and public wealth will soon be found in the recent wilderness. The development of the mountain region will swell our national resources with ingots of precious metal, and probably require, for the accommodation of local travel and commerce, the construction of other roads to the Pacific.

MISSOURI PACIFIC RAILROAD.

This road runs from St. Louis to Kansas City. It is 283 miles long. The initial steps having been taken in 1849, active work was begun Aug. 2, 1851, and the last rail was laid Sept. 19, 1865.

The cost of construction was.....	\$11,418,794
“ “ rolling stock.....	2,049,674

Total cost of the road	\$13,468,468
------------------------------	--------------

From the inception to the completion of this road, every step of progress was retarded by difficulties of the gravest character. Financial embarrassments, disastrous accidents, and rebel raids have severely tested the ability and resources of the Company. In the fall of 1864, the Missouri Pacific suffered terribly from the devastations of civil war. The rebels, besides inflicting other extensive injuries upon the road, destroyed 11 bridges whose total length was more than 3250 feet. The aggregate damage from this incursion was \$500,000. Yet the magnitude of these losses and impediments has but increased the honor of ultimate success. The dauntless purpose and administrative skill which surmounted so great obstacles are worthy of public and grateful remembrance.

The funds which enabled the Directors to complete the road were derived from the following sources:

State Bonds	\$7,000,000
County subscriptions	2,845,630
Missouri Pacific Railroad Bonds.....	1,500,000
Private subscriptions	764,000
St. Louis County Bonds.....	700,000

Some of these loans were effected with the greatest difficulty. Aid was at times granted only when it became apparent that, in the event of refusal, the enterprise would have to be abandoned. The reluctance of the Legislature to pledge the public credit for the completion of the road did not arise from unfriendliness, but from the fiscal embarrassments of the State. Only a resolution undismayed by disaster and an ability resourceful in difficulties could have carried the road successfully through these financial emergencies.

During the rebellion, the main line and the Southwest Branch were of incalculable importance to the country. The extent of this service may be inferred from the fact, that, in 1863, '64 and '65, the net receipts for Government transportation were \$758,550. The terrible ravages of the rebel armies would have been much worse, had it not been for the facilities of rapid movement and sudden concentration which these roads afforded to the national forces.

The present equipment of the Missouri Pacific is:

Mail cars.....	7
Baggage and Express cars.....	17
Caboose cars.....	29
Passenger cars	41
Locomotives.....	47
Freight cars.....	641

The total quantity of iron rails used in the construction and repair of this road is 27,600 tons. The service of the line requires a constant force of 1500 men.

The Company is purposing, at an early day, to change the width of the track to 4 feet 8½ inches. The road will then have the same gauge as that of the Union Pacific. When the contemplated change has been made, this road will form an unbroken and uniform part of that magnificent line which will soon stretch to the Pacific shore. The road is now doing an immense and steadily increasing business. The success and general utility of the Missouri Pacific long since justified the action of the Legislature in granting the loan of the public credit. The issue of State bonds, ensuring the capital necessary to the completion of the road, was an act of legislative wisdom. The influence of this railway upon the prosperity of Missouri has been signally beneficial. We hope that public honor and private wealth will reward the energetic and farsighted men who, under such grave discouragements, carried forward this road to a successful consummation.

UNION PACIFIC RAILROAD, EASTERN DIVISION.

The State of Missouri has a deep and permanent interest in the Union Pacific railway. This line was contemplated in the Pacific Railroad Act of 1862. In the original bill, it constituted the St. Louis connection of the Union Pacific railroad, whose initial point was the 100th meridian of longitude. By later legislation in 1864 and 1866, the junction of the "Northern or Omaha" road and the "Kansas or Smoky Hill" road was changed to a point "fifty miles west of the meridian of Denver" in Colorado.

The Union Pacific railway, with its connections, is the shortest line between the mountains and the Mississippi river. It lies 200 miles south of the Omaha Branch, and will be comparatively free from the snows which will obstruct the Northern line. In its entire length, it crosses no navigable stream. It must inevitably become the trunk line across the continent. This road is a continuation of the great central chain of railways running west from the

Atlantic metropolis. From New York to San Francisco, the main road deviates but little from the base line of the fortieth parallel.

The work upon the Union Pacific railway, Eastern Division, was begun in 1863, but owing to the war and various legal difficulties was not vigorously prosecuted until July 1865, when the present organization assumed control. The following data in regard to the road have been furnished by one of the officers of the Company. The line of the Union Pacific railway, as located under the present law, starts from the Missouri river at the western terminus of the Pacific railroad of Missouri and runs almost due west up the rich valleys of the Kansas and Smoky Hill rivers, and from the head-waters of the latter across the plains to Denver, and thence along the base of the mountains to the point of junction with the Northern Branch. The length of this Division is about 700 miles.

Of this distance, 225 miles have been completed, fully equipped, and accepted by the United States Government. A continuous railway now extends 508 miles west from St. Louis. A branch road, 31 miles long, has also been built from Lawrence to Leavenworth.

The Union Pacific Company contemplate the construction of a railroad to Santa Fé. They purpose to begin the preliminary survey at an early date. The initial point is Filley, a town 200 miles east of Denver. The distance to Santa Fé is about 400 miles. This road would give an outlet to the productions of New Mexico, open the territory to the invasion of enterprise, bring its resources within the reach of commerce, and attract a rich trade to St. Louis. It is the design of the Company ultimately to extend this road through Arizona and Southern California to the Pacific. The same grave considerations of public economy, self-defence, and material development which led the Government to lend its credit to the central road should induce it to grant subsidies to this Southern line.

Contracts have been made to complete the main road to the 385 mile-post west of the Missouri river by December 31, 1867. 225 miles of track, extending from Kansas City to Fort Harker, are now laid. Beyond the present terminus, 90 miles of graded road are ready for the rails.

The cross-ties of the Pacific Railroad, Eastern Division, are made of hard wood. The rails weigh 56 pounds per lineal yard, and are all of American manufacture. 22,000 tons of bars have been already used in the construction of this road, and 14,000 more are now on their way.

By the first of June, this road will have the following equipment:

Baggage and Express cars.....	5
Passenger cars	14
Locomotive engines.....	25
Freight cars	418

The earnings of the road for the quarter ending December 31, 1866, exceeded \$200,000. It is believed that the receipts during 1867 will average \$100,000 per month.

The subsidies with which the Government aids the construction of this portion of the Pacific railroad are :

1st. A loan of \$16,000 for each mile of railroad and telegraph line, to be delivered to the company as each section of 20 miles is completed and accepted by the government. It consists of 30 years, U. S. 6 per cent. bonds, secured by a second lien. The interest and principal are guaranteed by the United States. The law permits the company to issue bonds of an equal amount per mile, secured by a first mortgage having priority over the government lien.

2nd. A grant of 12,800 acres of land per mile of finished road. It gives alternate sections extending 20 miles on each side of the road.

The Bonds issued to this division of the Pacific railroad mature in 30 years. The interest on these Bonds is paid by the U. S. Government. To secure the repayment of this interest, the Government deducts and retains one half of the cost of its own transportations over the road. The amount of mails, troops, munitions of war, and Indian supplies, carried over this line, is very large. Before the close of the coming summer, 27,000,000 pounds of Government freight will be shipped by this route to the territories. The total amount of interest which the Government has paid on the bonds of this road, up to March 1, 1867, is \$97,000. The cost of Government transportation, from Oct. 15, 1866, to March 1, 1867, is \$55,000. Of this sum, the Government has reserved \$27,000. This amount is more than 30 per cent. of all the interest which the Government has paid on the Bonds of the road. After the present year, the transportation of Government supplies will probably refund to the national treasury all the money advanced for the payment of the interest on these Bonds. An examination of the business of the road discloses the unexpected and gratifying fact, that this great national work will be accomplished without cost or embarrassment to the Government. In the event of an Indian war, or of an invasion of the Pacific coast, this railroad would be invaluable to the financial interests and military success of the nation. It would lessen the expenses, and facilitate the prosecution, of a frontier war. It would give strong material guarantees for the perpetuity of the Union. The completion of this national highway will strengthen the alliance of the States with iron bands, and develop our Western wilderness into populous commonwealths.

In addition to the grant of public lands, the company has bought from the Delaware and Pottawatamie tribes of Indians about 600,000 acres in the heavily timbered regions of Eastern Kansas. This purchase comprises some of the finest farming lands in the State. Nearly 1,000,000 acres of valuable lands, all lying east of Fort Riley, are now offered by this company for sale to actual settlers. The progress of the Pacific railroad and the natural attractions of Kansas have exerted so marked an influence upon immigration, that the actual increase in the population of that State, during the year 1866, was, according to the estimate of Gov. Crawford, 50,000 people.

These princely subsidies from the Government and the financial strength and executive energy of this corporation justify the expectation that the work will be completed in the time prescribed by law.

ATLANTIC AND PACIFIC RAILROAD.

This road was formerly called the Southwest Branch, but its ownership and title have recently been changed. It runs from Franklin—a town on the Missouri Pacific, 37 miles west of St. Louis—to the Gasconade river. The length of the independent line is 88 miles.

The extension of the Atlantic and Pacific is making rapid progress. A bridge nearly 800 feet long will soon span the Gasconade. A force of 1500 men is now at work upon the continuation of the road. The distance from the Gasconade river to the Arkansas line is about 200 miles. The cost of extending the road to the borders of the State is estimated at \$6,000,000. The amount which the development of the mineral resources of Southwestern Missouri would add to our common wealth cannot be calculated, but the rise in the value of real estate which the completion of this road would cause has been appraised at \$25,000,000. The extension of this line from its present terminus merely to the southwest corner of Missouri would be an incalculable benefit. The trade of the Northwestern roads may be partially diverted from St. Louis by the construction of rival lines. But the Atlantic and Pacific, by its advantages of situation, will compel all connecting lines to be subsidiary to itself; and its commerce, constantly swelled by the traffic of tributary roads, must necessarily flow to St. Louis. The extension of this road would open to settlement vast tracts of valuable land, and by the impulse of cheap transportation lead to an extended development of the rich mines of Southwestern Missouri.

ST. LOUIS AND IRON MOUNTAIN RAILROAD.

"The St. Louis and Iron Mountain" and "The Cairo and Fulton" railroads have recently been sold by order of the Governor of Missouri for the redemption of funds which the State advanced them.

The amount of State loan to the former road is.....	\$3,501,000
" " " latter "	650,000
" interest for six years, to Jan. 1st 1867	1,494,360

Total indebtedness to the State.....\$5,645,360

The State bought these roads Sept. 27, 1866, and in November following sold them through Commissioners to Messrs. McKay, Reed and Co. of Pittsburg for \$900,000, payable in Missouri Bonds. The deeds were made by the State Jan. 9, 1867; and, on the 12th of the same month, the purchasers sold the roads to Hon. Thomas Allen of St. Louis, for \$1,275,000.

The Iron Mountain railroad, running from St. Louis to Pilot Knob, is 87 miles long; and cost, exclusive of discount, interest and commissions, \$4,356,800. The quantity of rails used in the con-

struction of this road is about 10,000 tons. Its freight is mostly iron ore, pig metal, lead, barytes, lumber, and wood. In 1865, its earnings were \$424,700; and, in 1866, they were probably still larger.

The Cairo and Fulton railroad begins at Bird's Point on the Mississippi, and will eventually terminate on Red River in the Southwest corner of Arkansas. But 26 miles of the road are now finished. Its cost, exclusive of incidental expenses, \$680,300. It has a land grant of about 500,000 acres. The country through which it runs produces a rich growth of timber, corn, and cotton. It is estimated that, in 1866, 60,000 bales of cotton—including probably some shipments from contiguous counties in Arkansas—were brought from Southeast Missouri.

The present proprietor of these two roads will consolidate them under the style of "The St. Louis, Iron Mountain, and Southern Railway", and make an unbroken line from St. Louis to Belmont, opposite the terminus of the Mobile and Ohio Railroad. The conditions of the purchase exact the completion of this road within five years; but Mr. Allen feels confident of his ability to finish it in less than half of that time. The cost of the road will be about \$4,500,000.

An ultimate extension of this line to Helena is contemplated. In fact, the initial steps have already been taken. The Legislature of Arkansas has recently revised the original charter of the road, and granted ampler privileges. The liberality of these franchises has led to the organization of a company, and the subscription of \$1,000,000 in capital and *materiel*. The estimated expense of this road is \$5,000,000. The distance from Iron-ton to Helena is 230 miles. The country through which the projected line passes is productive, well-watered, and generally level. Even where inequalities exist, the grades are relatively light.

The completion of this road to Helena is highly important to St. Louis. It would greatly enhance our municipal prosperity. Vast commercial interests depend upon the success of this undertaking. Between St. Louis and Helena, navigation in the summer season is sometimes embarrassed by low water and sandbars; and, in the winter-time, it is frequently obstructed by floating ice. Though the intervals of interruption are temporary, yet the briefest suspension of our Southern communications inflicts a serious injury upon the mereantile interests of St. Louis.

The continuation of the Iron Mountain road to Helena would open an avenue to a point below which navigation is never impeded by ice or low water. An outlet to the great markets of the South, direct, available, and always free from obstructions, would soon develop our winter trade into summer proportions.

EDUCATION.

No treatment of the material interests of a State can be complete, without some discussion of the spiritual forces which vitalize them. Public wealth is often a cause of national decay. Genuine prosperity implies the guidance of intelligence and morality. No community can greatly flourish where ignorance and dishonesty prevail. The political economy which ignores the intellectual and moral forces of society discards the prime essentials of public welfare. The commonwealth is only supremely great when it is actuated by enlightened motives and imbued with the spirit of a Christian civilization.

During the war, domestic turbulence greatly impaired the efficiency of our common schools. In some of the rural districts, the shock of arms or the distempered condition of the public mind led to a temporary suspension of the schools. But now, since the civil strife which disorganized our educational system has ceased, our schools are resuming their activity. Under the old *regime*, indifference to public culture was a prominent trait. A social system which rested on unjust distinctions of caste and fostered civil inequality would naturally look with disfavor upon the cause of popular education. An aristocracy based upon wrong has an instinctive dread of intelligence. There is a deathless hostility between them. Ignorance is the helpless victim of oppression, but popular enlightenment is the divine victor of injustice. Now, since the feudal impediment to our progress has been removed, we shall advance with a freer movement. A fresh energy invigorates our public polity. A spirit of freedom and progress imparts a new life to our educational system. The people of Missouri are actively re-organizing their public schools. They are striving with a zealous co-operation of individual and legislative efforts, to extend and improve their institutions of learning.

The public schools of St. Louis were organized in 1833, and went into practical operation in 1839. They are now an honor to Western culture. Improved by the best results of experience, taught by an accomplished corps of instructors, and aided with the resources of valuable Public Libraries, they afford to the youth of this metropolis the means of a thorough popular education. The grades of our public schools are based upon a system of rigid classification. They culminate in the High School. Students enter this institution only through the ordeal of a competitive examination. Admittance, therefore, implies exemplary deportment and successful scholarship. The discipline of the High School embraces the higher branches of an English education and the Academic course of Classic culture. The scholarly training of this institution qualifies its graduates for the duties of life or the pursuit of polite learning.

The Normal School in this city affords excellent opportunities for professional discipline. It teaches the philosophy of education as well as the best processes of practical instruction. The profes-

sional success of its graduates shows the effect of trained skill and systematic teaching.

In addition to its public schools, St. Louis has endowed Universities whose excellence obviates the necessity of sending Western youth to Eastern institutions for a liberal education. In one of these Universities, the mathematical course is as full and exhaustive as at West Point, and the standard of scholarship, in the chief departments of study, is scarcely inferior to that of Harvard or Yale.

St. Louis also possesses excellent seminaries for the education of young women. The Mary Institute is virtually a College. To students pursuing the extended course, it offers the main advantages of a liberal culture. It opens to young women fields of study and sources of refined enjoyment from which they have been too long excluded. Such institutions exert a beneficent influence upon society. They add to wealth the graces of polite culture, invest poverty with honorable means of self-support, and enrich every fireside with ampler resources of happiness.

The Polytechnic Institute of St. Louis is a noble monument of private munificence and public usefulness. The building is one of the most expensive and superb structures in the United States. The cost of erection, together with the value of the grounds, was more than \$400,000. The edifice is worthy of its use. It will be devoted to the service of practical science. Here the philosophy of the industrial arts will be taught. In these halls, artisans will receive gratuitous instruction in those scientific principles which underlie every mechanical pursuit. The processes which mere experience can but imperfectly discover at the close of a business life may here be accurately learned at the beginning. The apprentice and artificer can here acquire briefer solutions of mechanical problems, cheaper methods of manufacture, and the latest appliances of chemical science to the industrial arts. Poverty will debar no student from the halls of this institution. The instruction is free. A mastery of the practical principles taught in the Polytechnic Institute is a strong guarantee of business success.

There is no reason why St. Louis, with its admirable system of public schools and higher institutions of learning, should not become the center of Western culture. The metropolis of the West should diffuse throughout this valley those principles of mental and moral enlightenment on which our republican civilization rests.

The State University of Missouri, located at Columbia, was seriously injured by the ravages of civil war. Insurgent violence caused a suspension of the literary exercises and a partial destruction of the buildings. But the appropriation granted by the last Legislature will repair the injuries of the rebellion and restore the University to its former usefulness. The central location of this institution adapts it to the convenience of the interior. Reorganized on a broader basis and imbued with a progressive spirit, our State University will be capable of efficient service in the cause of education and freedom.

Active efforts are now making, with every probability of ultimate success, for the establishment of an Agricultural College in Missouri. The new institution will be an important addition to the educational facilities of the State. By teaching the economic processes of scientific husbandry, by determining the analysis and capacities of different soils, by explaining the philosophy of fertilization and the remedy for defects of essential elements, by exploring the cause and cure of vegetable diseases, by discovering the nature of injurious insects and the means of destroying them, by testing the adaptation of valuable foreign plants to our own lands, and by elevating the chief industry and reliance of the nation to the dignity of a science, an Agricultural College would actively promote the material and mental development of the State.

The public school law of Missouri is liberal and equitable. It imposes upon the people of the State the duty of maintaining free schools. It provides for the education of all classes, without distinction of color. This law fully accords with the spirit of the age. Its provisions embody the soundest philosophy and the finest humanity of civil ethics.

Missouri encourages immigrants by a just and generous care for the education of their children. Immigrants will find here not only rare opportunities for material success, but excellent facilities for the cultivation of those spiritual forces which determine the destinies of men and the greatness of nations.

SPECIAL INDUCEMENTS AND FACILITIES FOR IMMIGRATION TO MISSOURI.

The provisions of the new Constitution of Missouri are highly favorable to immigrants. By the liberal terms of this Charter "Every white male citizen of the United States, and every white male person of foreign birth who may have declared his intention to become a citizen of the United States, according to law, not less than one year nor more than five years before he offers to vote, who is over the age of twentyone years, who is not disqualified by or under any of the provisions of this Constitution, and who shall have complied with its requirements, and have resided in the State one year next preceding any election, or next preceding his registration as a voter, and during the last sixty days of that period shall have resided in the county, city or town where he offers to vote, or seeks registration as a voter, shall be entitled to a vote at such elections for all officers, State, county or municipal, made elective by the people."

There are hundreds of thousands of acres of valuable land in this State subject to entry under the homestead law. The conditions

of this law are generous: "Any person who is the head of a family, or who has arrived at the age of twenty-one years, and is a citizen of the United States, or who shall have filed his intentions to become such, as required by the naturalization laws of the United States, and who has never borne arms against the United States Government, or given aid and comfort to its enemies shall, from and after the 1st of January, 1863, be entitled to enter one quarter section or less quantity of unappropriated public lands, upon which said person may have filed a pre-emption claim, or which may at the time the application is made be subject to pre-emption, at \$1.25 or less per acre; or 80 acres or less of such unappropriated lands at \$2.50 per acre, to be located in a body, in conformity to the legal subdivisions of the public lands, and after the same shall have been surveyed: Provided, That any person owning and residing on land may, under provisions of this act, enter other land lying contiguous to his or her said land, which shall not, with the land so already owned or occupied, exceed in the aggregate one hundred and sixty acres."

The cost of entry at the land office is \$14. After a residence of five years upon the land and the additional payment of \$4, the title is complete, and a patent, vesting in the occupant the fee simple of the property, is issued. The humblest manual laborer can, by the earnings of a single month, purchase a farm of a hundred and sixty acres. By the liberality of our beneficent Government, the poor man can buy a homestead at less than twelve cents an acre.

Any public lands in Missouri, contemplated by the terms of the act, can be entered under the homestead law. The Government accepts in payment for public lands cash, land warrants and agricultural scrip. By act of Congress passed July 2, 1862, "this scrip, when duly assigned and attested by two witnesses, under such authority of the said State as the act of the Legislature thereof may designate, may be surrendered at any land office in satisfaction of a location of "one quarter of a section," or for any quantity in one legal subdivision less than one quarter section, where such location is taken in full for one quarter section—the location to be restricted to vacant public lands subject to entry at private sale at \$1.25 per acre, mineral lands excluded, and whilst the aggregate location of all the claims under the said act may be taken in any of the territories without limitation as to the quantity located in any one of them, yet, in virtue of express limitation in the statute, not more than 1,000,000 acres of the total aggregate scrip-issue under said act can be located within the limits of any of the States." Agricultural scrip is now very cheap. It can be bought at sixty cents an acre; in other words, 160 acres of land, which the Government values at \$200, can be purchased by means of this scrip for \$96. But one difficulty attends the location of land with College scrip. Under a 160 acre land warrant, the sole requisition is that the forty acre subdivisions shall lie in contiguous tracts. But a location with scrip demands that the land shall constitute a "quarter section" in the technical sense of the law. Divide a "section" into four equilateral parts—160 acres, if entered with scrip, must comprise one of

these squares. No other form will satisfy the requirements of the law.

There are now three land districts in Missouri. A new division has recently been made.

The Ironton district lies east of range 11 west, and south of township 38. The recording office is at Ironton.

The Springfield district comprises that portion of the State which is situated west of range 10 west, and south of township 35. The registry is at Springfield.

The Boonville district embraces all the rest of the State. The office of entry is located at Boonville.

Letters of inquiry should be addressed to the "Register of Public Lands" in that district where the immigrant proposes to settle. Gratuitous information relative to the character and adaptations of lands in their several departments is promptly furnished by the land officers.

The Graduation Act was repealed in 1862.

The public lands are now in large demand. Thousands of immigrants are now coming to Missouri.

But the danger of exhausting our supply of lands is not imminent. Official returns, just received from the registries, show that there are now in the

Boonville District—790,000 acres of unentered public lands.

Ironton " 1,000,000 " "

Springfield " 2,000,000 " "

As in each of these cases the lowest estimate of the registers has been given, it is probable that there are now in this State more than 4,000,000 acres of land still subject to entry.

The effect of freedom upon the material interests of Missouri is most palpable. When it is remembered that the ordinance of emancipation was passed January 11, 1865, the following figures, recently derived from official sources, are eminently instructive:

The entries in the Ironton District were in 1863.....	655 acres.
" " " 1864.....	7,395 "
" " " 1865.....	21,709 "
" " " 1866.....	60,131 "

From 1860 to 1866 inclusive, 17,375 acres were entered under the Pre-emption Act; and, in the years 1864, '65, and '66, 71,542 acres were registered under the Homestead Law.

The statistics of the Boonville office are a still more signal illustration of the influence of universal liberty.

For the year and three quarters preceeding the passage of the Ordinance of Emancipation, the entries at the Boonville office were 38,496 acres—for the same period subsequent to the passage of that act, the entries were 607,145 acres. Of this vast quantity, 402,392 acres were entered during the last year, prior to the first of October.

During the rebellion, the disturbed condition of the State greatly diminished the number of entries. Yet, after making every

just allowance for the decrease due to civil disorder, our comparison still signally vindicates the superior prosperity of freedom.

But even these facts do not fully indicate the extent of our immigration. Thousands of immigrants have bought improved farms, but of course the land office keeps no record of such transfers of property. The effect of this large accession to our population has been to raise the price of improved lands. Though our cultivated farms can still be purchased at very low rates, yet Eastern men must no longer indulge the hope of buying our best lands at the prices which prevailed before the disenthralment of the State. Nor must they expect to find amid the rude conditions of frontier life the social advantages of older communities. A recollection of this obvious fact will prevent disappointment. The immigrant will find here an inexhaustible richness of soil and mine. A wild, exuberant, fruitful nature lies before him. But his own energy must develope its resources, and his own art fashion abundant materials into a beautiful home. Nature furnishes the facilities, but man must use them.

The intelligent forecast of our railroad and steamboat companies leads them to encourage immigration by special favors. They often give to destitute immigrants free or reduced transportation. Their policy is sagacious. The generosity which immediately relieves the beneficiary will eventually enrich the benefactor.

"The Board of Immigration of the State of Missouri" was organized under an act of the Legislature, approved Feb. 16, 1865. The following sections, copied from the amended act, express the constitution, objects and resources of the Board.

"Be it enacted by the General Assembly of the State of Missouri as follows:

"SECTION 1. There shall be a Board of Immigration, which shall be composed of five members, three of which are to be appointed by the Governor.

"SEC. 2. The Governor and Secretary of State shall be ex-officio members of this board; and it shall be its duty to do all and everything which may and will advance and encourage immigration to this State, either from the eastern States of the United States or from the eastern hemisphere.

"SEC. 3. The members of this board shall, if they deem it advisable and proper for the encouragement of immigration, publish or cause to be published pamphlets, essays and articles treating on and describing, in a true light, the developed and undeveloped agricultural and mineral resources of the State of Missouri, our facilities for navigation, railroad connections, and our wide-spread commerce, and to distribute them in such localities wherever, in their opinion, they may be useful, beneficial and of good for the promotion of immigration to our State.

"SEC. 4. They also shall have power, whenever deemed expedient by them, to appoint an agent or agents, either for the eastern States of the United States or for Europe, for the purpose of aiding and advising immigration; and such agent or agents shall act solely

under the instruction of the Board of Immigration, who shall also fix and allow their compensation for their services, to be paid out of the fund created as hereinafter provided.

"SEC. 8. The sum of two thousand dollars, annually, is hereby appropriated out of any money in the Treasury of the State not otherwise appropriated, for the use of the Board of Immigration, to be expended by them as they think best and expedient for the interest of immigration to the State of Missouri, which shall be in full of all other appropriations.

"SEC. 9. The Board of Immigration is furthermore authorized and shall have power to open books and invite and solicit contributions and endowments of money from corporations, manufacturers, merchants and all persons who are immediately and directly benefited by the flow of immigration; which money so contributed shall also be under the control of and expended by the Board for the intents and purposes in the preceding section stated.

"SEC. 12. It shall be the duty of said Board to co-operate with the Bureau of Immigration at Washington City, and to make regular reports of their labors and proceedings to the General Assembly of the State, accompanied by such references, suggestions and statistics as may furnish good and reliable data and a proper basis for future legislation on the subject of immigration."

The total receipts of the Board during 1865 and '66 were about \$10,500. A rigid economy has presided over all disbursements. But the unsufficiency of the present appropriation greatly restricts the usefulness of the Board. A legislative liberality, proportioned to the importance of the work, would enable the officers to enlarge the operations and secure the beneficial objects of the organization. The results already attained, in despite of limited means, evince the wisdom of the Legislature in creating the Board, and justify sanguine expectations of future utility.

It is believed that 2000 families have been induced to settle in Missouri through the agency of this association. Thousands of letters of inquiry have been answered, and a large amount of valuable information upon the resources of the State has been circulated. The first report of the Secretary is full of useful facts. The officers of the Missouri State Board of Immigration are:

Gov. THOS. C. FLETCHER, President, Jefferson City, Mo.

F. RODMAN, Secy. of State, Vice Pres., " " "

HON. ISIDOR BUSH, Secretary, 322 Chestnut St., St. Louis.

HON. A. VALLE, Treasurer, " " " "

HON. F. MUENCH, German Correspondent, Augusta, Mo.

REV. MARTIN W. WILLIS, Gen. Agent, 309 Locust st., St. Louis.

OFFICE OF STATE BOARD OF IMMIGRATION " " " "

The Secretary and Agent will cheerfully respond to all inquiries concerning Missouri. By the diffusion of free information and by the encouragement of personal assistance, the Board is actively fulfilling the object of its organization.

The name of the "German Emigrant Aid Society" imports the nature of its services. The capital of this organization is now

about \$5,000, and the prospect of an early enlargement is hopeful. The efficiency of the society is greater by far than its means. Its benevolent activity is restricted to the relief of indigent Germans. The following statement exhibits some of the labors of this society during the past year.

Number of families forwarded to their destination.....	7
“ “ patients treated at the hospital.....	15
“ “ persons provided with board.....	70
“ “ “ aided with money.....	78
“ “ “ supplied with work.....	146
“ “ days' board furnished.....	181
Amount of pecuniary assistance.....	\$365
“ recovered for lost baggage.....	\$524
“ dispatched to immigrants.....	\$1,289

But perhaps the larger part of the labor of this society escapes the form of tabular expression. It has directed immigrants to those portions of the State best adapted to the exercise of their several vocations, recommended the cheapest lines of travel, negotiated loans, recovered delayed baggage, procured legal advice and compelled the fulfilment of contracts for transportation. Its services in cases of sickness, destitution and helplessness have been unremitting and effective.

“The Mullanphy Emigrant Relief Fund” is under the management of a Board of Commissioners composed of the Mayor of St. Louis and a member—elected by the Common Council—from each of the ten wards of the city. The amount of this fund is over \$500,000. The property is mostly unproductive real estate. At first, the title of the lands was contested, and the Board was seriously embarrassed by suits at law. After the adjustment of the rights of possession, the improvements, so long deferred by litigation, were begun. In 1864 and '65, the Board spent \$40,000 in the erection of buildings. During the present year, the rent of fifteen new houses will still further enlarge the revenue of the fund. The net income from the estate is now \$10,000 a year. It is the present policy of the Board to expend almost all of this sum in the improvement of the property.

By this process the quickest increase of capital and the amplest means of future usefulness will be secured. In 1865, the almoner of the board dispensed \$1,000 for the relief and assistance of foreign immigrants.

The Commissioners are now erecting, at a cost of \$25,000, a large building at the corner of Sixth and Gratiot streets. The structure will be 40 feet front, 120 feet deep, and 3 stories high. Its accommodations will be spacious. It will contain 75 berths, and couches could be spread, upon an emergency, in the open spaces. It will comprise rooms for baggage, bathing, and cooking. An elevator and a safe will complete the conveniences of the establishment. The Board think that the accommodations of this building will be sufficiently large to meet the present wants of all that class of immigrants contemplated in the bequest. The friendly and judi-

cious hospitalities of this institution will not only relieve destitution, but also promote immigration.

The following extract from the organic ordinance of the Common Council fully explains the uses of the Mullanphy fund:

"First. In order that relief from said fund shall be furnished to all poor immigrants and travelers coming to St. Louis, on their way *bona fide* to settle in the West, a building shall be erected upon a lot at some convenient point, a part of which shall be fitted up for lodging and boarding rooms, with a hall for use in the day; and on the lower floor, let there be kept the office of the Secretary of the Board and the business room, to which immigrants and travelers may first be taken. This plan is subject to such modifications by the Board of Commissioners as may be found convenient. This house shall have ample room for the deposit of baggage of the immigrants, and for other necessary conveniences. An officer shall be appointed to be the Secretary and Business Agent of the Board. He shall collect all information needful for the benefit of immigrants and travelers, relating to climate, soil, character of land, &c., that will enable immigrants and travelers to learn, as far as practicable, all facts relating to localities by which they may determine the best place for them to go, and he shall, by all means in his power, and in the manner required of him by the Board, keep up correct information upon all such subjects, and he shall use his best endeavors to procure and keep in his office all information needed for the purposes above named, and shall procure and keep registered, as far as practicable, a list of lands in different localities which may be offered to settlers, with a note of all facts relating thereto.

Second. There shall be appointed an Assistant Secretary by the Board. He shall visit all boats and trains of cars arriving with immigrants and travelers, make himself known to them and give them such information on the spot as they should have to enable them to pass safely through the city, and, where they need assistance, he shall, under regulations to be adopted by the Board, take them to the building with their baggage when necessary, and see that they are safely placed within the charge of agents of the house. There they shall by him be furnished with all necessary information as to boats, routes and lands, so as to be thoroughly informed upon all points useful to them. Where immigrants are poor and needy, they shall be relieved under regulations to be prescribed by the Board. And it shall be the especial duty of this officer to protect immigrants and travelers from impositions and false information attempted by runners, and upon their departure this officer shall procure their tickets and superintend their shipment."

After the full improvement of the Mullanphy estate, the princely revenue accruing from the rents will be exclusively donated to the assistance of needy immigrants. Many a friendless passenger will yet bless the memory of him who organized his generosity into a perpetual beneficence.

Even a general description of the Counties of Missouri would far exceed the prescribed limits of this pamphlet. Emigrants desiring such fullness of practical detail must procure the Geological

Reports of the State, or wait till they reach St. Louis, where it will be easy to obtain all the information they need. Immigrants who have not already decided upon a location should buy through tickets to the farthest points which they purpose to explore. For, even in case they should not go quite to the proposed destination, the local rates are so high that it would still be a matter of economy to purchase the through ticket.

Parties who propose to settle in the West would do well to form colonies. Then they could at once command the advantages of organized communities. They could bear with them their household gods, and rear in their honor sacred and secular temples—the church and the school house. The institutions transplanted from a less genial clime might flourish in our fertile soil with a richer growth and mature the fruitage of a still fairer civilization.

Our limitless expanse of unsettled lands invites the occupancy of colonists. The population of Missouri is not proportioned to the magnitude of the State. In 1860, our census was 1,182,000. If this State was as densely peopled as England, Missouri would contain a population of 25,000,000. By the extent and diversity of its resources, Missouri is better able to support this vast number in competency and independence than England is to maintain its present population.

Missouri needs able-bodied men. There is opulence in muscle. The physical energies of a healthful man in the prime of life are appraised at \$1,000. Every robust immigrant, however unblessed with the goods of fortune, enriches the State with his wealth of sinew. Our broad acres need the labors of myriads of workmen.

The suppression of the rebellion is an augury of peaceful thrift. The restoration of the Union is a guarantee of National greatness. The American people are now entering upon a career of material prosperity to which the annals of political economy present no parallel. It requires no gift of prophecy to foretell the thronging millions who will, within a score of years, people this vast valley. A simple calculation based upon the tables of the census is all the inspiration which the prediction demands. The tidal waves of population which follow the star of empire will not pause in their westward flow, till they break against the rocky barriers of the Sierra Nevada. The rich mineral deposits of the Rocky Mountains will lead to an early settlement of the surrounding country. Soon tens of millions will people the vast domain which lies on the "sunset side of the Father of Waters." Cottages, hamlets, cities will spring up. Every resource of nature will be explored. Wealth will be developed. The industrial products of the country will reach aggregates which will startle the statistician. The Mississippi valley, whose annual yield of cereals now exceeds 1,000,000,000 bushels, will become the granary of the world. Metallurgy will utilize in countless forms and uses the rich products of our mines. Our manufactories will create capital, economize material, naturalize gold, nationalize comfort, vindicate our industrial independence, and satisfy our American wants with domestic productions. The exchange of commodities, in obedience to the laws of demand and sup-

ply will freight our railroads with the merchandize of a vast internal trade. Our vessels, laden with richer cargoes than the fabled freights of classic argosies, navigating every stream and traversing every main, will expand our inland and international commerce into still grander proportions. The restless energies of the Anglo-American character will achieve a greatness that will surpass precedent, and justify to mankind the soundness of our faith in the incentives, stability and excellence of republican institutions.

In the accomplishment of this great national destiny, Missouri will do her full part. Emerging from her fierce conflict with treason, triumphant yet sorely wounded, she will not now, with her brow radiant with the new luster of freedom and her loins girt with the untarnished cineture of loyalty, yield to any of her sister States in the generous rivalries of peace. But her present industrial force is not equal to the developement of her resources. She urgently solicits assistance. She seeks the co-operation of the self-reliant laborers of New England, and of the two hundred thousand sturdy immigrants who are annually landing at the port of New York. She promises a cordial welcome and liberal compensation to the higher classes of trained and skilful workmen. She especially needs educated labor. She appeals to an intelligent self-interest, and invites the potters, goldsmiths, watchmakers, vinedressers, silk-weavers, glassmakers and metallurgists of Europe to come to her heritage and better their condition.

Free Missouri, instinet with the spirit of progress and loyal to the genius of republican liberty will welcome the immigrant to the enjoyment of her boundless advantages, and enrich his industry with generous recompense. Millions may accept the proffered hospitalities without exhausting the ample board which Missouri spreads upon her table lands.

